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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2164



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USSR, GDR FOCUS ON SOCIALIST ECONOMIC INTEGRATION ANALYZED

East Berlin DEUTSCHE AUSSENPOLITIK in German Vol 26 No 7, Jul 81 signed to press
5 Jun 81 pp 44-57

/Article by Dr Hans-Joachim Dubrowsky, Bruno Leuschner College of Economics, East Berlin: "Problems of Socialist Economic Integration at the Most Recent CPSU and SED Congresses"

/Text The Twenty-Sixth CPSU Congress was a historic event for communists generally, not only those of the Soviet Union. The USSR is the decisive power in the socialist world system. It has the greatest wealth of experience with regard to the construction of socialism and communism. It supplies most of the impetus for the anti-imperialist struggle on the one hand and the maintenance of peace on the other.

CPSU congresses are always the starting point of new initiatives for the deepening of cooperation among the countries of the socialist community of nations. That holds true equally for their economic cooperation and socialist economic integration.

The Twenty-Sixth CPSU Congress provided a fundamental assessment of the role of all-round cooperation by the countries of the socialist community, including their socialist economic integration. "We can no longer even imagine that any socialist country could enjoy a stable development without relations with the other fraternal countries..."¹

The party congress emphasized that the Soviet Union is indefatigably attentive to the consolidation of friendship and cooperation with the countries of socialism. "Together with them we construct the new, the socialist world, a type of relations between countries unprecedented in history--truly equitable, equal and fraternal relations."²

In this connection Leonid Brezhnev pointed out that such relations are mutually beneficial in every respect. "We jointly settle the problems arising in our cooperation. We seek means for the best possible coupling of the interests of the various fraternal countries and common interests."³ At the same time the CEMA countries help one another whenever necessary. That is the reflection of socialist internationalism in action.

The Twenty-sixth CPSU Congress was also a forum, and the general secretaries or first secretaries of communist and working peoples parties in the CEMA member

countries gave their assessments of the importance and role of socialist economic integration. Janos Kadar, for instance, stated: "Our work of construction as well as our international operations are aided by the great strength of cooperation among the countries of the Warsaw Pact and the Council for Economic Mutual Aid."⁴

Todor Zhivkov emphasized that "our membership in the Council for Economic Mutual Aid secures for us far reaching opportunities to advance and prosper."⁵ Nicolae Ceaușescu stressed that "Romania is firmly resolved in future also to contribute to cooperation in CEMA in order to ensure that the member countries needs for raw materials, other materials and energy, machine tools and modern technologies are met. The work of this organization will thus become a model of equitable relations and fruitful cooperation between free and sovereign socialist countries for the victory of socialism and communism in our countries."⁶

Lumjaagiyn Tsedenbal assessed economic integration as follows: "Socialist economic integration has become an objective reality. It contributes mainly to the conservation of manpower and resources, the internationalization of experiences in the construction of the new society, the development of international economic organizations, the application of tested methods of production and labor specialization and cooperation. All this provides the material base for the further expansion of fraternal friendship and the general cooperation of the socialist countries."⁷

The CPSU Central Committee report also underlines the importance of socialist economic integration for all CEMA countries by again emphasizing "that management and economics are the decisive section of the frontline in the competition with capitalism."⁸ It is therefore particularly significant that, despite the fact (stressed by Leonid Brezhnev) that the past few years were by no means easy for the national economies of some socialist countries, the economic growth rate in the CEMA member countries was twice that of the developed capitalist countries in the last 10 years. "The member countries of the Council for Economic Mutual Aid have remained the group of countries enjoying the most dynamic progress in the world."⁹

In 1980 the CEMA countries achieved the following growth rates by comparison with 1975 (expressed as percentages):

	National Income	Industrial Production
Bulgaria	34	33
Hungary	18	18
Vietnam*	19	25
GDR	22	27
Cuba	19**	19
Mongolia	31	50
Poland	8	24
Romania	42	58
USSR	23	24
CSSR	19	25
CEMA	22	26

(* 1979:1975; ** Gross national product)

Source: Report of Operations, International Bank for Economic Cooperation, Moscow 1981

The CEMA countries did not begin economic integration until the 1970's but have already recorded impressive successes. In this connection the Twenty-sixth CPSU Congress mentioned in particular the results achieved by production specialization, the construction of joint major projects, the coordination of five-year plans, the preparation of long-range target programs and bilateral programs for international production specialization and cooperation. Among the jointly constructed major projects in the energy and raw material sectors the party congress mentioned the Soviet-Mongolian Erdenet copper-molybdenum combine and the nickel plant in Cuba, and especially the Orenburg natural gas complex and natural gas pipeline, the Ust-Ilimsk woodpulp combine, the Kijembai asbestos mining and processing combine, the extension of the energy network by the construction of the first 750 kilovolt transmission line--all built in the Soviet Union. These projects are in operation now. Deliveries to the CEMA countries involved have begun and will, for a long time to come, help maintain stable supplies in these countries.

The development of the Orenburg natural gas deposit and the construction of the Soyuz natural gas pipeline from Orenburg to the western borders of the USSR proceeded with the participation of Bulgaria, Hungary, the GDR, Poland and the CSSR. The natural gas line was largely completed by the end of 1978; at 2,677 km in length and with a capacity of 28 billion cubic meters per annum its output is among the foremost worldwide. It carries an annual volume of 15.5 billion cubic meters to the participating CEMA countries (2.8 billion cubic meters to the GDR) and is also used to supply some West European customers.

The Ust-Ilimsk woodpulp combine produces 500,000 tons per annum and is also one of the biggest of its kind anywhere. Based on Siberian timber stocks the Soviet Union, Bulgaria, Hungary, the GDR, Poland and Romania created a joint project which will supply 205,000 tons of woodpulp annually to the participating CEMA countries. In late 1980 the first stage became operational, with a capacity of 250 kilotons per annum.

The Kijembai asbestos combine in the southern Urals was jointly constructed by all European CEMA members. The first stage began operations in 1979, the second in late 1980. The capacity envisaged (500,000 tons) has been achieved. Deliveries to the participating CEMA countries amount to 177,000 tons of asbestos annually.

A very different community project is the construction of the first international 750 kilovolt electricity transmission line. It runs 843 km from Vinnitsa in the Soviet Union to Albertirsa in Hungary. Not only the two countries immediately affected were involved in this construction; Bulgaria, the GDR, Poland and the CSSR also took part. Hungary transmits Soviet electricity to the latter countries by means of lower voltage lines. The 750 kilovolt line was completed in October 1978 and has since then served the additional supply of USSR electricity to the European CEMA countries. For Hungary, for instance, this yielded an "intermediate system effect" of about 600 megawatt, for the GDR roughly 220 megawatt and for the CSSR 200 megawatt.¹⁰ As a result of this new international transmission line the capacity of the CEMA countries international electricity network has grown significantly, making possible the additional delivery of 6.4 billion kilowatt hours per annum from the Soviet Union to the participating countries.

Another reflection of the tremendous progress achieved by production specialization in the CEMA region is the expansion of reciprocal trade in specialized products. In the years 1976-1980, for example, the reciprocal exchange of such products rose 2.7-fold with regard to machine construction while reciprocal machinery trade in general merely doubled.

New Impetus for Integration

Consequent upon the agreements concluded at the Crimea Conference, in particular, the CPSU and the other fraternal parties intend to make the coming 10 years a period of intensive cooperation in production, science and technology. The Twenty-Sixth CPSU Congress has provided new impetus for this project. Central to it is certainly the proposal that the senior statesmen of the CEMA countries should collectively discuss some new assignments in the very near future. The Twenty-Sixth CPSU Congress included among these new assignments (among others) the completion of plan coordination by the synchronization of economic policies in general and the mutual adjustment of the structures of economic mechanisms.¹¹

These assignments reflect the new and mature conditions prevailing in the economic development of the CEMA countries. All European CEMA countries are making strenuous efforts to carry out the transition to intensively expanded reproduction, emphasize the qualitative factors of growth and cope with unfavorable foreign political and foreign trade conditions.

"It must be noted in general that, for some years past, our countries have been compelled to accomplish their creative assignments in rather more difficult conditions. This was due in part to the deterioration in the world economy and to galloping prices. Another considerable burden was imposed by the halt in detente and the arms race forced on us by imperialism."¹²

It is obvious that in these conditions the even more efficient utilization of the potential of socialist economic integration is an important reserve and precondition for the continuing successful advance of the countries involved. In this connection we should note the party congress suggestion for more attentively studying and more broadly utilizing the experiences of the various fraternal countries.

Steadily more important for the CEMA countries are reciprocal supplies by means of the community's international market, which are consonant with needs. The Twenty-sixth CPSU Congress commented: "We are all interested in ensuring that the socialist market is capable of satisfying the growing needs of the countries in our community. We are mutually complementing our economic potentials, and the benefits derived therefrom transcend merely commercial criteria."¹³ The Soviet Union itself is making a notable contribution. In the past 5 years Soviet foreign trade with the other CEMA countries increased by about 75 percent.

The Soviet Union is the principal trading partner of every other CEMA country. It handles almost 40 percent of internal CEMA trade. In the years 1976-1980 it supplied goods to the other CEMA countries worth R8 billion more than the goods it purchased. Not only is the USSR the principal supplier of raw materials and fuel; it also provides most machines and equipment within CEMA.

Development of USSR Trade With the Other CEMA Countries

	million rubles		percent 1980:1975
	1975	1980	
Bulgaria	3,991	7,099	178
Hungary	3,274	5,738	175
Vietnam	207	612	296
GDR	5,623	9,200	164
Cuba	2,589	4,266	165
Mongolia	480	884	184
Poland	4,853	8,002	165
Romania	1,256	2,791	222
CSSR	3,911	7,184	184
Total	26,184	45,776	175

Source: USSR FOREIGN TRADE, Moscow 1981, No 3 (supplement) and USSR foreign trade statistics for 1975

Further to increase the offer on the international market of the CEMA countries and adjust it even better to the needs of the new stage of integration, cooperation in the sectors most important to the community must be further deepened. In this connection the Twenty-Sixth CPSU Congress called for the concentration of economic cooperation on the solution of such vital problems as the development of energy supplies, the supplies of raw materials and fuel as well as their rational use, the improvement of the technical standard and the quality of machine construction products, the strengthening of cooperation in the production of modern machines and plant, the expansion of the assortment of consumer goods and the improvement of product quality.¹⁴ This demand corresponds to the targets in the jointly adopted program for the period through 1990.

Soviet deliveries are vital for the energy and raw materials supplies of the CEMA countries, especially because these supplies are forthcoming at far more favorable prices than in the capitalist world economic system.

The Twentieth-Sixth CPSU Congress emphasized the necessity, especially in view of the more and more adverse conditions for development, mining and transportation, more carefully to handle energy, raw materials and fuel, everywhere to enforce the best possible conservation practices and further refine basic substances. That holds true not only for the Soviet Union, in fact it is an urgent requirement on all CEMA countries--not least in view of the considerable rise in raw material prices, which is still persisting.

In this context let me point out the exceptional increases in the deliveries of some important goods by the Soviet Union to the other CEMA countries.

Soviet Union Deliveries to the Other CEMA Countries

	1961/1965	1966/1970	1971/1975	1976/1980
Oil (million tons)	59	138	250	370
Natural gas (billion cubic feet)	2	8	30	88
Electricity (billion kilowatt hours)	4	14	40	64

Source: PROBLEME DES FRIEDENS UND DES SOZIALISMUS, Berlin 1980, No 8, p 1090

As regards natural gas and electricity the current five-year plan period deliveries will again far exceed the volume of supplies in the 1976-1980 period: 130 billion cubic meters of natural gas and 137 billion kilowatt hours of electricity. Many other raw material deliveries, though, will not exceed 1980 levels. At the Twenty-sixth CPSU Congress Leonid Brezhnev therefore invited the other CEMA countries to participate in the development of West Siberian natural gas deposits.

The Twenty-Sixth CPSU Congress also was enormously interesting for all other CEMA countries because it discussed and decided the further social, scientific-technological and economic development of the largest CEMA member country. The main trends of USSR economic development adopted at the party congress and the further consolidation of Soviet economic power coupled therewith provide new opportunities for socialist economic integration and, at the same time, strengthen the economic capacity of the entire community.

It is highly significant that the Twenty-Sixth CPSU Congress adopted decisions about the development of the Soviet economy well beyond a five-year period, actually for the next 10 years. The CEMA countries therefore have a clear concept of the economic development of this major member country, and this facilitates the coordination of economic policies, the more precise definition of bilateral programs of specialization and cooperation, involvement in specific investments in the USSR and the preparation of plan coordination 1985-1990.

The CPSU's attitude to socialist economic integration was very clearly defined at the party congress. The congress proposed actively to participate in the further deepening of socialist economic integration, trace new opportunities for the development of cooperation, the rational utilization of the scientific-technological production potential, the material, financial and manpower resources of the countries of the socialist community, with the aim to jointly tackle the problems involved in the intensification of the economies and the creation of additional sources of goods resources.¹⁶

Emphasized in particular was the consistent pursuit of the realization of long-range target programs and bilateral program for production specialization and cooperation. Such bilateral programs, running through 1990, were concluded by the Soviet Union with Bulgaria and the GDR in 1979, with the CSSR, Hungary, Romania and Poland (that is with all European CEMA countries) in 1980. They represent one of the tools for the long-range planned interlocking of these CEMA countries with the Soviet Union, their main integration partner.

The Tenth SED Congress and Socialist Economic Integration

The Tenth SED Congress ascribed exceptional importance to issues involving the socialist community of nations, to all-round cooperation among the socialist member countries.

"It gives us profound satisfaction to note that the German Democratic Republic's cooperation with the fraternal countries rapidly advanced in all sectors of life during the period under review, and that it was enriched by valuable experiences. The indestructible fraternal alliance with the Soviet Union, the sound footing of our republic in the community of socialist nations...is and continues to be the stable foundation of our people's security and success in the organization of the developed socialist society.

As in past years we will continue to contribute to the further consolidation of the unity and solidarity of our community of nations. That is the guarantee of its successful advance and, at the same time, the satisfactory development of each member country."¹⁷

In this connection the Tenth SED Congress described socialist economic integration as the decisive prerequisite and firm foundation of the GDR's ongoing stable and dynamic economic and social progress. The party congress noted as a particularly significant factor that, thanks to its close cooperation with the Soviet Union and the other CEMA member countries, the GDR will be able in future also to guarantee its stable and dynamic advance as a sound element within the socialist community.¹⁸

In full agreement with the Twenty-Sixth CPSU Congress the Tenth SED Congress also praised the results achieved by the socialist community. Unprecedented successes were recorded in the expansion of the material-technical base of socialism and communism. Economic development in the CEMA region in recent years was distinguished by a more rapid rate of growth in national income, productivity and industrial output than anything registered in the world of capital. The party congress stressed that the community of socialist nations has impressively demonstrated the fact that social security rules only in socialism. At the same time the congress noted:

"Our socialist community is showing its worth as a totally new kind of alliance, built upon the conformity of socio-economic and political bases, the uniform ideology of Marxism-Leninism, the unity of communist aims and interests, the international solidarity of the working people."¹⁹

The Central Committee report to the Tenth SED Congress dealt directly with the proposal made by Leonid Brezhnev at the Twenty-Sixth CPSU Congress regarding a conference of leading CEMA statesmen. The SED emphatically approved this proposal. It was in favor of collective discussions of the new economic problems which have arisen and underlined the fact that the common generalization of best experiences in the construction of socialism and communism as well as the adjustment of the structures of economic mechanisms would benefit all fraternal countries.²⁰

The Soviet Union--the Main Power of the Community

The Tenth SED Congress emphasized most of all the special importance of cooperation with the Soviet Union as the main power of the socialist community and the center

of socialist economic integration. The party congress directive characterized as vital for the development of the GDR economy's capacity the steady deepening and expansion of scientific-technological and economic relations with the USSR. The report to the party congress puts it even more bluntly:

"The more socialism advances in the GDR, the closer will be economic and scientific-technological cooperation with the Soviet Union, the greater its significance for the stability and dynamism of our economy. The increasing interlocking of our national economies, the steadily more effective combination of their forces allow both fraternally allied countries more securely and rapidly to advance on the common path. They strengthen the joint potential of real socialism. In view of the greater exacerbation of conditions in the international class conflict, these factors assume even greater importance."²¹

The conceptual basis of the ongoing deepening of scientific-technological and economic cooperation with the Soviet Union is the long-range program of specialization and cooperation with the USSR, concluded in 1979. It deals with the common strategy for the further interlocking of the two national economies. That fact is all the more significant considering that involved here are the respectively largest trading partners in the foreign trade of the two countries. The USSR holds an almost 40 percent share in the GDR's foreign trade turnover.

The Tenth SED Congress stressed that the SED ascribes fundamental political and economic importance to this program. The joint efforts focus on the even closer interlocking of the two countries material and intellectual potentials. The measures already agreed to with respect to 35 industries are designed to produce a particularly large contribution to the growth of efficiency.

The directive of the Tenth SED Congress states, for example: "Solid links with the USSR's scientific-technological potential provide the requisites for making comprehensively effective the findings of scientific-technological progress for the development of the GDR's economy in such crucial sectors as microelectronics, the technologies of heat and electricity generation, the more complete utilization of solid fuels, the development of new processes and plant for the chemical industry as well as the development and application of progressive technologies for the improvement of productivity in the metal processing industry."²²

The party congress emphasized that the qualitative standard and rate of growth of reciprocal deliveries was more and more influenced by the results of research and production cooperation. The GDR's specialized export products already account for the largest share in trade with the USSR. In 1979 this share amounted to 41 percent (31 percent in trade with the CEMA countries generally). In the last five-year plan period it rose by about 10 percent and is bound to increase further.

The security of stable and long-term raw materials and fuel supplies is of outstanding importance in the GDR's cooperation with the Soviet Union. The Tenth SED Congress stressed that the agreed extensive raw materials imports from the USSR are largely the result of joint efforts, in other words the result of socialist economic integration.

The GDR contributes to the assurance of the agreed raw material imports from the USSR mainly by the supply of modern machines, plant, chemical products and consumer

goods. The strict fulfillment of these delivery obligations is a prime objective of proletarian internationalism.

Key Points of Integration

The Central Committee report to the Tenth SED Congress underlines that the GDR will expand and deepen economic and scientific-technological cooperation with the other CEMA countries also, within the scope of socialist economic integration. The basis here is represented by the jointly agreed target programs and the coordination of five-year plans carried out in 1980.

In its directive for the period 1981-1985 the Tenth SED Congress calls for the increasingly tight interlocking of the GDR's national economy with the economies of the USSR and the other CEMA member countries. The following key points were announced:

- Further deepening of cooperation in science and technology with the aim of speeding up scientific-technological progress and its efficacy for the greatest possible rise in the performance of the national economy by the rapid transfer of common research results to production;
- The assurance of stable and long-range supplies of raw materials and fuels and their efficient utilization;
- The deepening of international specialization and cooperation with the aim of an efficient production structure, the improvement of productivity, the assurance of stable supplies of material and equipment for the national economy as well as the all-round growth of the GDR's export capacity.

By these key points the further deepening of socialist economic integration will be fully incorporated in the SED's economic strategy decided upon at the tenth congress for the further stable and dynamic development of the national economy in the 1980's, both from the aspect of the utilization of socialist economic integration as an element of this strategy and from that of the provision of prerequisites for further deepening economic integration with the other CEMA countries.

Many of the measures decided at the Tenth SED Congress directly serve the implementation of the agreed long-range target programs of the CEMA countries, the bilateral program of specialization and cooperation with the Soviet Union and the coordination of five-year plans with all CEMA member countries. That applies, for instance, to the entire complex of the greater refinement of imported raw materials, materials and energy conservation in the widest sense, the above average increase in output and exports of the products of machine construction, including the construction and expansion of capacities for the GDR's greater involvement in the output of nuclear power plant equipment. On the other hand it relates to the speedier expansion of nuclear power production; the GDR intends to raise the share of nuclear power in electricity production to 12-14 percent by 1985. Of the greatest importance is the decision to increase grain production to at least 10 million tons and to create a stable feedstuffs basis in order to supply the growing animal production entirely from domestic yields. These examples merely serve to give some idea of the variety

and breadth of the effects on socialist economic integration of the measures decided upon.

Party Congress and Socialist Economic Integration

Currently the GDR participates in some 500 agreements on production specialization and cooperation within CEMA. Increasingly involved here are jointly developed products which conform to the highest scientific-technological standards. The Tenth SED Congress emphasized the necessity of securing mutual benefits with respect to every single measure and achieving the greatest possible profit for the national economies involved. It will therefore be necessary in the matter of the international socialist division of labor also more than hitherto to mobilize and utilize qualitative factors.

Concerning investment cooperation with other CEMA countries within the scope of socialist economic integration, the GDR--following satisfactory experiences, especially in cooperation with the Soviet Union--is interested in particular in the joint reconstruction of selected plants. That responds to the CEMA countries efforts primarily to allocate investments to rationalization projects, speed up their implementation and utilize the experiences of the fraternal countries. Lately the GDR agreed with the Soviet Union on a new joint project: The reconstruction of the manufacturing facility for large-size motors in the Dresden Sachsenwerk. Work has already begun.

The deepening of socialist economic integration will result in more growth of reciprocal trade among the CEMA countries. Up to the present time the GDR has agreed reciprocal deliveries in excess of M474.5 billion for the years 1981-1985. That corresponds to a 43.6 percent growth compared with the previous five-year plan period. This kind of growth also requires new joint efforts to safeguard the transportation of the steadily larger flow of goods among the CEMA countries. Ocean traffic alone between the GDR and the USSR increased by more than 40 percent in the past 5 years compared to the period 1976-1980. The Tenth SED Congress therefore insisted that joint measures should make transit routes and ports capable of handling larger volumes and introduce modern transport technologies. The long-range target program on cooperation in the development of transport connections is an excellent basis. Some concrete projects voted at the Tenth SED Congress directly serve the implementation of this program. They include the electrification of 700-750 km of railway sections as well as the increase in the performance of sea ports to 144-146 percent by 1985.

The Tenth SED Congress, exactly like the Twenty-Sixth CPSU Congress, reiterated the party's readiness to continue support for the non-European CEMA member countries--the Republic of Cuba, the Socialist Republic of Vietnam and the Mongolian People's Republic--by the expansion of production cooperation, participation in investment projects, the deepening of scientific-technological cooperation and the training of skilled cadres, among others.

Important Orientations for the 1980's

The Twenty-Sixth CPSU Congress and the Tenth SED Congress as well as the party congresses in other CEMA countries provided important orientations for the further implementation of socialist economic integration in the 1980's. They may be summarized as follows:

1. The CEMA countries consider socialist economic integration an objective condition for their further development. They will therefore continue to actively develop and deepen it. In consideration of newly arising internal and external problems the CEMA countries will soon enter into collective discussions about the conceptual further developments to be tackled.

2. More than ever economic cooperation and the interlocking of their own economies with that of the Soviet Union within the scope of socialist economic integration is of supreme importance for every CEMA country. The coming years will therefore witness a definite deepening of cooperation especially with the Soviet Union. Among the European CEMA countries the coordinated basis for these proceedings consists in the long-range agreements on specialization and cooperation through 1990.

3. As many CEMA countries are making the transition to mainly intensive expanded reproduction, new challenges are arising on socialist economic integration. Qualitative factors are coming to the fore in the relations between CEMA countries just as they are doing within the national economies. In these conditions the coordination of economic policies, the exchange of experiences, the changes in economic mechanisms assume increasing importance.

4. Particularly important in this connection is the faster development of scientific-technological cooperation and its concentration on fields which promise broad advances for the national economies involved. At the same time it will be necessary to emphasize common efforts for the speedier transfer to production of the results of scientific-technological cooperation.

5. Production specialization and cooperation involve more and more sectors and are becoming the main methods of production cooperation in socialist economic integration. The most important task is that of raising the efficiency of specialization and cooperation in production and their contribution to the utilization of the results of scientific-technological advances.

6. With respect to the long-range assurance of raw materials and energy for the countries of the community, joint efforts in the field of the more rational use of raw materials and fuels, materials and energy, secondary raw materials management and the search for alternative energy sources will complement joint efforts to ensure supplies from the community's own primary resources.

7. Of the greatest and fundamental importance also for the further development of socialist economic integration are the issues involved in cooperation with those CEMA countries which are still at a low level of economic development. Similar problems are also increasingly important with regard to cooperation with more and more developing countries which are choosing the socialist road to development.

The CPSU and SED congresses--and those of other communist and workers parties in the CEMA countries--have demonstrated that socialist economic integration is an important precondition for the assurance and further deepening of the unity and solidarity of the socialist community. From this aspect also the party congresses have clearly reflected the resolution further to advance on this road.

FOOTNOTES

1. "XXVI. Parteitag der KPdSU, Rechenschaftsbericht des ZK der KPdSU und die Naechsten Aufgaben der Partei in der Innen- und Aussenpolitik" /Twenty-sixth CPSU Congress, CPSU Central Committee Report and the Future Tasks of the Party in Domestic and Foreign Affairs," Berlin 1981, p 13.
2. Ibid, p 8.
3. Ibid, p 13.
4. PRESSE DER SOWJETUNION, Berlin 1981, No 6, p 160.
5. Ibid, p 161.
6. Ibid, p 163.
7. Ibid, p 166.
8. "Twenty-Sixth CPSU Congress....," as before, p 11.
9. Ibid, p 12.
10. See DIE WIRTSCHAFT, Berlin 1979, No 3, p 29.
11. See "Twenty-Sixth CPSU Congress....," as before, p 12.
12. Ibid, pp 13 f.
13. Ibid, p 13.
14. "Comrade Tikhonov's Report to the Twenty-Sixth CPSU Congress," NEUES DEUTSCHLAND, Berlin, 28 February/1 March 1981, p 7.
15. Ibid.
16. "Haupttrichtungen der Wirtschaftlichen und Sozialen Entwicklung der UdSSR fuer die Jahre 1981 bis 1985 und fuer den Zeitraum bis 1990" /Main Directions of USSR Economic and Social Developments for the Years 1981-1985 and the Period Through 1990/, Berlin 1981, p 88.
17. "Bericht des ZK der SED an den X. Parteitag der SED" /SED Central Committee Report to the Tenth SED Congress/, Berlin 1981, p 19.
18. Ibid, p 8.
19. Ibid, p 21.
20. Ibid, p 21.

21. Ibid, p 82.

22. "Direktive des X. Parteitages der SED zum Fuenfjahrplan fuer die Entwicklung der Volkswirtschaft der DDR in den Jahren 1981 bis 1985" /Tenth SED Congress Directive on the Five-Year Plan for the Development of the GDR Economy in the Years 1981-1985/, Berlin 1861 (!), p 78.

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DEVELOPMENT OF POWER INDUSTRY OUTLINED

AU111525 Tirana ZERI I POPULLIT in Albanian 8 Jul 81 p 3

[Article by Llazar Papajorgji, director of the directorate for electricity at the Ministry of Power: "The Development of Energy--Testimony to the Party's Farsighted Policy"]

[Excerpt] The tasks stipulated for the energy sector in the Seventh 5-Year period are considerable and will require greater and more qualified effort by all the working people in the energy sector. During the Seventh 5-Year period the hydroelectric power plants will produce twice as much electricity than was produced for two 5-year periods taken together (1966-1975). In 1985 alone, the output of electricity will be 29.3 times more than was produced by all hydroelectric power plants in 1960 or an amount equal to that produced during the period 1966-1970. This means that in the overall structure of the country's power balance, hydropower will increase about 3 times more than in 1970. Electricity exports will be increased considerably and in 1981 alone is expected to be 22 percent higher than the total electricity exported during the period 1970-1975. Foreign currency incomes from electricity exports during the Seventh 5-Year period are expected to be about 2.6 times higher than in the Sixth 5-Year period.

As a result of the construction of new high-tension lines and of nine stations, the improvement of the energy coefficient, the more rational distribution of energy flows and so forth, network losses will be reduced about 18 percent. Production costs will be reduced and net incomes are expected to increase 3.6 times over the Sixth 5-Year period.

Investment will be made during the Seventh 5-Year period for the construction of the Koman and Bushat hydroelectric power plants, and for the construction of some 400 kilometers of 220 kv lines and a number of substations, which will not only reduce supply cuts to consumers, but will also lead to fuel savings in the thermal power plants during the peak of the water flow. Thus for example, the construction of the Tirana-Durres-Fier 220 kv high tension line will lead to an annual saving of about 70,000 tons of fuel. The volume of investments during this 5-year period will be nearly 3 times greater than those effected in 1960 for the entire industrial sector and about 53 times more than was invested in that year for the construction of power plants and electrification.

SUCSESSES, SHORTCOMINGS IN ENERGY INDUSTRY DISCUSSED

Tirana BASHKIMI in Albanian 16 Jul 81 pp 2-3

[Article by Faik Cinaj, deputy minister of energy: "Bright Prospects for the Energy Industry"]

[Excerpts] Our economy not only satisfies its needs for fuel and energy but also exports petroleum products, coal and electric power. In 1980, compared to 1975, the overall industrial production for the energy sectors increased 46.1 percent, with an average rate of increase of 7.9 percent. The extraction of gas in the 6th five-year plan increased 85 percent, compared to the 5th five-year plan, while the extraction of coal increased 1.6 times in 1980 compared to 1975 and the production of electric power increased twofold. Despite the sabotage of the Chinese revisionists, 48 new industrial projects of the energy system were constructed and put into operation in the 6th five-year plan.

Our working class, guided by the party, has successfully overcome all the difficulties resulting from the Chinese treachery and blockade. As a result, production not only did not decrease, but, on the contrary, increased. During the 1979-1980 period, when we were relying on our own forces alone, the growth rate for industrial production was 16.6 percent compared to the planned increase of 14.9 percent.

As always, priority was given in the 6th five-year plan to the geology sector, with the aim that new prospects would be found. New sources of petroleum and gas were discovered and the quality of geological-geophysical studies and complex workings was improved. Seismic workings increased 2.8 times compared to the 5th five-year plan and prospecting and drilling work increased 36.7 percent. During this period, measures were taken for the assimilation of deep drilling technology.

During the 6th five-year plan all the petroleum produced was processed in the country. The deep processing of petroleum in Ballsh increased the quantity and quality of the fuels. During this period, large power plants such as the "Light of the Party" hydroelectric power plant in Fierze, the 60 megawatt thermoelectric power plant in Fier, and others were put into operation. In 1980, 5 times as much electric power as was produced in 1960 was exported.

But there is no room for self-satisfaction. Some partial shortfalls in these sectors, especially in the area of the regular fulfillment of the overall industrial

production plan, in the production of certain items and in productivity, indicate that there are still some reserves which are not being utilized. At the present time, the draft directives of the 8th party congress on the 7th five-year plan (1981-1985) are being discussed in the working collectives. Efforts are being made to analyze, with a critical eye, the causes of the non-fulfillment of the plans and to give valuable ideas on how to achieve greater progress.

In the 7th five-year plan, the power industry is expected to grow rapidly. In 1985, compared to 1980, overall industrial production is expected to increase 37.9 percent. Some 98 new industrial units will be constructed and put into operation for the energy system. These include the hydroelectric power plant in Koman, and the lubricating oils plant in Ballsh. The petroleum industry will develop at a rapid pace in the new five-year plan. In the area on prospecting and drilling for oil, in which the state invests great amounts of money, more thorough measures must be taken to perfect the technology of drilling wells at greater depths. The improvement of technical-scientific discipline is a duty of all drilling workers in order to improve the main indicator of drilling and increase the monthly drilling rate.

Proletarian discipline in drilling wells must be increased. This will prevent damage. Concern and attention should be given to preventive measures by everyone from the lowest ranking drilling worker to the leading cadres of the petroleum sector.

Now, during the discussion of the draft directives, attention should be concentrated on the best use of deposits and on measures to increase oil extraction. This requires the wider use of secondary methods of working in the layers and the application of those methods which are suited to conditions of each deposit. The aim should be to exploit new deposits of petroleum on the most scientific bases. Also, they should exploit dried up wells which are a great reserve.

The coal industry will also be developed during this five-year plan. The coal will be extracted mainly from existing deposits. The increasing of mineral workings will better ensure the mining of coal. The directors of the coal mines must work harder to raise the level of training of the workers. This will help them to achieve the high indicators of exploitation technology. During the discussion, attention will be concentrated on the evaluation of views dealing with the raising of the level of mechanization, especially in the processes of dropping, transporting and loading coal and waste matter. This is of great importance since the replacement of manpower with machines will reduce the work of the workers and increase yields. The improvement of the quality of the coal and its economical use will be another task not only for the workers in this branch but also for all consumers.

With the commissioning of the Koman hydroelectric power plant and the utilization of the thermoelectric power plants at full capacity, the production of electric power in 1985 is expected to be 14.7 percent higher than in 1980 and the power exported will be 2.3 times that of the 6th five-year plan. In this branch, attention will be given to reducing losses in the system and to reducing energy consumption by the plants themselves. An important task of this five-year plan

is the full utilization of the productive capacities of the thermoelectric power plants, using coal and gas as raw materials.

One of the important objectives of workers in the field of energy during the 7th five-year plan is the economical use of energy, in general, and of fuels, in particular. During the first 5 months of this year, satisfactory quantities of electric power, steam, mazut and solar energy were saved. These reserves and others, which will come to light during the discussion of the draft directives by all the workers of the country, will further improve the indicators of the draft plan.

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ALBANIA

BRIEFS

ALGERIAN TRADE DELEGATION--A government trade delegation of the Democratic and Popular Republic of Algeria led by Finance Minister Mohamed Hadj Yala arrived today in Albania. The delegation will hold talks and sign a trade agreement between the two countries. The delegation was received by Minister of Foreign Trade Nedin Hoxha, Deputy Minister of Foreign Trade Jetnor Rama, Bashkim Pitarka, director of the second directorate of the Ministry of Foreign Affairs, and others. [Text] [AU102036 Tirana Domestic Service in Albanian 2000 GMT 10 Jul 81]

SOFIA CEMA MEETING--As has been reported, the 35th CEMA session was held in Sofia on 2-4 July. Taking part were the prime ministers of this capitalist group's member countries and some delegations invited from other countries. For 4 days, Moscow's vassals discussed, under Tikhonov's direction, their worries over energy supplies and the high prices they must pay for them to their patron. Likewise, future trade between member countries was discussed at this meeting, and tasks were presented for new measures to further deepen their economic integration until 1985. The Kremlin's envoy, who mainly spoke about oil and raw material supply problems, declared from the beginning that the Soviet Union could not possibly follow the increases practiced in the past; thus making it clear that oil and raw material supplies from Moscow to the CEMA members' supplementary economy would be smaller. The Polish prime minister, Jaruzelski, admitted on the other hand that our union is experiencing daily difficulties. One of the most important problems requiring an urgent solution is the fulfillment of the CEMA members' request for grain, meat and other agricultural-food products. Similar complaints were also made by prime ministers of Hungary, Czechoslovakia and Bulgaria, who asked that the unequal system of prices be reexamined and also investments in Soviet projects, [word indistinct] which runs through the whole interrevisionist union is directly tied to the deep crisis which has clasped this capitalist group and to the savage exploitation of East European economies by the Soviet social imperialists. [Text] [AU061605 Tirana Domestic Service in Albanian 1230 GMT 6 Jul 81]

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MINISTER URGES LABOR SAVINGS THROUGH COUNTERPLANNING

Prague HOSPODARSKE NOVINY in Czech 17 Jul 81 p 1

[Article by Dezider Krocsany, minister of labor and social affairs: "Labor Savings through Counterplanning"]

[Text] Demanding goals and conditions of economic and social development in the Seventh Five-Year Plan require qualitatively new approaches in the management and application of wage policy. The fundamental guidelines and objectives necessary to insure the monetary incentives of the planned tasks are based on the Principal Guidelines for Wage Policy in the Seventh Five-Year Plan approved by the CSSR Government Presidium and the governments of the republics. This document is an open-ended program of basic approaches to the realization of systematic measures in wage policy and their application in practice.

Systematic measures were adopted in agreement with the Principal Guidelines on Wage Policy, and the Set of Measures in the area of regulation of wages payable; in conjunction with other economic tools of the national economic policy they assist in the implementation of the principles of counterplanning.

Acceptance of higher targets for the plan is clearly profitable; the size of wages payable rises proportionately with the percentage expressing the growth of the objectives over the planned. When an organization does not accept a higher plan, but exceeds the original plan in the course of its realization, it may increase its amount of wages payable by a specific share determined by recomputation coefficients that are less than one. Those coefficients are set for the individual branches by CSSR Government Decree No 404/1980 on incentive measures for manpower savings, in the range from 0.6 to 0.3. This means that for overfulfillment of the planned objectives the enterprises may raise their amount of wages by 30 to 60 percent of the sum due to them on the basis of the norms or absolute limits.

Absolute savings in manpower are particularly profitable. When an organization accepts tasks as part of the plan at the level set for it in the five-year plan or in the guideline for the annual plan with a smaller work force than the maximum established limit, it keeps the entire amount of wages payable according to the norms or absolute limits, and it can use these funds for increasing average earnings. If in the course of the plan implementation it does not fill the planned personnel strength, it keeps a share of the funds realized by this saving, namely 40 to 70

percent. In budgetary and contributory organizations about 20 percent of saved funds are left for the use of the organization. Special provisions apply to computerized budgetary organizations.

These new modifications in the area of monetary incentives for organizations rescinded the measures against overruns of planned average wages which were counter-productive to manpower savings in the Sixth Five-Year Plan and often led to the hiring of unproductive workers with lower earnings to attain an average wage lower and is to slow down its growth in relation to the plan. Cancellation of measures against exceeding planned average wages, or so-called ceilings, and approval of new measures to strengthen the motivation for manpower savings have removed to a considerable degree the existing barriers to the increase of earnings based on achievements. At the same time, they make it possible for organizations to increase the planned average wage when they accept, as a part of the plan, performance of the tasks set by the directive with fewer workers than specified by the maximum limits.

When organizations do not identify unused capacities in the planned work force, they become losers because they must share with the state the wages payable that are saved through [unplanned] reduced, compared to planned, manpower strength in the specified ratio.

The systematic measures in the area of institutional monetary incentives are linked with measures in the area of personal incentives. It is particularly the modification of monetary incentives for managers of economic organizations which makes it profitable to accept more progressive tasks for a selected indicator in the plan; when higher tasks are accepted in the annual plan compared to the five-year plan, or the directive for defining of the annual plan, the managers (director and his deputy) can be entitled to higher annual special compensations, by 5 to 10 percent (i.e., up to 30 to 40 percent, respectively, and up to 45 to 50 percent in mining organizations of coal, uranium, ores and magnesite industries) over the rate applicable if only the specified tasks are accepted, and set at maximally 30 percent of basic wages (40 percent in mining organizations). With the acceptance of lower tasks the rate of annual bonuses is set as low as 25 percent of basic wages.

The SSR Ministry of Labor and Social Affairs, on the basis of the data of the departments, has evaluated the trend of indicators and procedures of the central departmental organs, middle management links and enterprises in the implementation of these new principles in 1981. It may be stated that in directing and determining personal monetary incentives for the managers of economic organizations, the superior organs essentially followed the valid modification. There are some problems with the selection of a proper key indicator for evaluation of the progressiveness of the tasks. Such indicators should express the effectiveness and qualitative aspects of the economic activity of the organization. In some cases the indicators were rather quantitative in character, for instance, value added, adjusted value added, and the like.

The incentive element for more progressive tasks in the annual plan has not yet been utilized to the anticipated degree. Relatively few organizations used the opportunity to accept higher tasks in a selected indicator than those specified in the plan breakdown or in the directive so as to attain a higher allocation of

wages payable and expectation of higher annual bonuses for the managers. Organizations were conservative in the acceptance of plans this year.

The principles of counterplanning and increased effectiveness of compensations and personal monetary incentives require that principles similar to those specified for the managers also be used for personal monetary incentives of lower organizational units. That is, the managerial personnel of subdivisions, enterprises, concerns, small plants and shops, and those manual workers who suggest, accept and fulfill higher plan tasks than established by the breakdown of the five-year plan, or the directive for the objectives of the annual plan.

As a guideline for the manpower savings incentive, the ministries of labor and social affairs prepared particulars dealing with the use of wages payable acquired through labor savings. The organizations and organizational units may use the wages payable acquired through labor savings as bonuses for those workers who contributed to the achievement of manpower savings.

They also have the possibility of raising the wages of workers who have accepted a reduced work force in a counterplan and in sectors where labor savings are achieved by implementation or objectivization of work-use norms. Such profitability can be realized in various forms, for example, by rate adjustment of bonuses and special compensations, adjustment of personnel ratings, or pay adjustment in the range of the pay scale. What form of a wage increase is used is up to the director of the organization who decides individually the form of pay raise depending on the nature of the manpower savings.

The tools of wage policy for the Seventh Five-Year Plan both in the area of generation and disbursement of wages payable have created a whole scale of opportunities to promote the growth of general work productivity through labor savings. Efforts must be made to deal comprehensively in all areas and at all levels of planned management of the national economy with the problems related to stimulation of the growth of general work productivity.

The need for increased effectiveness in the interest of the growth of our economy also places demands on greater revaluation of past work--better use of fuels, energy, raw materials and commodities. This calls for higher qualitative demands on the functioning of the man in the production process, his attitude to work and tasks.

It may be assumed that initiative for acceptance of bigger and qualitatively and quantitatively more demanding tasks will appear at all levels of management and at every place of work. Above all, managerial personnel must capture this initiative and create a proper atmosphere for it, primarily through quality plans that are well coordinated and financially sound.

Existing experience has confirmed that the importance of the balance of work productivity factors has not been fully appreciated. They are usually set up mechanically and mostly based on extensive factors. Because human factors have been neglected, arguments on manpower shortage rather than counterplanning objectives for work productivity have been presented.

In the period of the Seventh Five-Year Plan, the potential of manpower resources and of their utilization must be quantified, particularly through rationalization of work.

Measures for improved management of cadre, personnel and social development that were carried out should also contribute considerably to implementation of counter-planning. Their main goal has been creation of conditions for better utilization of capabilities, skills and creativity of collectives and individuals.

The implementation of the Set of Measures must be associated with additional new forms of initiative by the workers and with application of progressive work methods at home and from other socialist countries, especially the USSR. New procedures are appearing and spreading that correspond to the present needs of the economy and the new rules of the planned management system. Such a form of work and compensation will have to be tested experimentally in our conditions as well.

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STRUCTURAL CHANGES IN ECONOMY SEEN NECESSARY FOR GROWTH

East Berlin WIRTSCHAFTSWISSENSCHAFT in German Vol 29 No 2, Feb 81 pp 129-142

/Article by Prof Dr Wolfgang Heinrichs, economist; director, Central Institute for Economics, GDR Academy of Sciences; corresponding member, GDR Academy of Sciences and member, WIRTSCHAFTSWISSENSCHAFT editorial staff/

/Text/ The SED program directly links the intensification of economic growth with the planned change in the structure of the economy. It is no accident that it points to the interrelations between the progressive intensification, rationalization and reconstruction of existing enterprises, the establishment of new production capacities and the perfection of the production structure which, in turn, must proceed in harmony with the planned progressive socialist economic integration.¹ Changes in the structure of the economy reflect different operating conditions as well as specific requirements of the economic laws of socialism. It is therefore interesting from the theoretical as well as the practical aspect to study these different operating conditions and requirements with respect to those structural changes which proceed in the course of the transition from a largely extensive to a largely intensive type of reproduction. These studies pursue, among others, the goal of discovering whether and to what extent certain operating and utilization conditions of the economic laws may change alongside the structural changes in the course of the transition from one to the other type of expanded socialist reproduction.

On the Characteristic Features of the Perfection of the Production Structure in Intensively Expanded Reproduction

Structural changes are not a new phenomenon² in the GDR economy which has displayed stable growth for one decade after another. This allows the conclusion that structural changes are inherent in largely extensively as well as largely intensively expanded socialist reproduction. Currently proceeding in the GDR and the economies of the other European CEMA member countries are such structural changes as occur in the course of the transition from one to the other type of expanded socialist reproduction. This means that they cannot be classified exclusively with one or the other type of reproduction. Nevertheless, initially we need an abstraction, in other words the assumption that expanded socialist reproduction is sustained by either the exclusively extensive or the exclusively intensive type. Only this way will we be able to respond to the question of the common features and differences in the structural changes with respect to the one or other type of reproduction.

In both types of reproduction structural changes reflect general interrelations between the development of productive forces (the deployment of resources) and the demand as well as the extent of its satisfaction (products/services and their structure). By changing sectoral, branch and product structures in the economy, the economic and social effects of scientific-technological progress come into their own, the process of socialization advances by the deepening of the social division of labor, and new production and service processes emerge, which more perfectly respond to the progressive development of productive and consumptive needs.

When defining economic structure we are usually referred to Marx who summarized it as a state of qualitative pattern and quantitative proportionality of total social labor.³ Here Marx meant the distribution of total social labor to the various branches and products of a national economy as well as the conditions of its constant renewal and change. In total social labor he included live as well as embodied labor. Marx stressed that, in socialist conditions, it first becomes possible and necessary for "society" to create "the connection between the volume of social working hours as related to the production of specific items and the volume of social demand to be satisfied by these items."⁴ This connection must be constantly renewed as per plan, from one reproduction period to the next. In simple and expanded reproduction this happens by the change in the distribution of total social labor to the various sectors, branches and products which, in turn, represent specific parts of the volume and level of needs. Viewed from this aspect structural change effects a change in distribution or the redistribution of the total social labor.

In addition to these common features which, therefore, are independent of the respective type of reproduction and reflect general relations of simple and expanded reproduction, there are significant differences in the structural changes occurring in the two types of reproduction. In extensively expanded reproduction structural changes occur for one by the quantitative growth of new production factors involved in economic circulation. This growth is variously distributed to the various sectors, branches, products, and so on, in accordance with the changes happening in the demand structure. Rising, moreover, is the total mass of social labor operating in the economic circulation. Changing alongside this rise is the distribution to the various products or product groups. Finally we must bear in mind that, from the material and financial aspect, the renewal of the existing production apparatus is secondary to its expansion. Consequently a significant proportion of the amortizations remains undistributed and is used to expand the production apparatus. This redistribution, complemented by the additional resources included in the economic circulation, provides the material and financial prerequisites for structural changes in the producing sectors and in the national economy as a whole. A concrete reflection of this changed distribution and redistribution of the total social labor (its embodied part) is the dynamism of investment proportions per sector, branch or product group and its comparison with basic asset proportions. The extent of the redistribution is demonstrated by the extent of the latter's deviations from the former. At the same time this redistribution means that parts of the national economy become obsolete from the scientific-technological and technical-economic aspects and that, therefore, the conditions for the growth of productivity and efficiency in the extractive production stages by way of the various stages of further processing up to the finished product differ very considerably. It is therefore characteristic for structural changes within the extensive type of reproduction to be sustained by the increase and simultaneous redistribution of total social labor

to the products or product groups and not in the first place by a decline in the expenditure of embodied and live labor per product or demand unit.

As I remarked earlier, the current real process of expanded socialist reproduction, on the other hand, always combines the effects of the intensive and extensive type of reproduction, and that applies to structural changes also. In the GDR, for example, for various reasons (partly historical) expanded socialist reproduction bore relatively strong intensive features even in the early stages of socialist reproduction, at least with regard to the method of managing live labor. That is why structural changes then proceeded hand in hand with real reductions in the expenditure of live labor per unit of need or production. However, at that time this process was not so crucial for the rate of expanded reproduction as a whole. More important instead (in respect to live labor) was the substantial increase in the labor capacity obtained by raising the incidence of employment among the employable population, especially women. We thus see how important it is not to lose sight of the category of the type of reproduction in the analysis of real phenomena such as structural changes, in order to define these phenomena either as more extensive or more intensive growth processes and be able to draw conclusions about the consequences for management, planning and stimulation in accordance with the changed operating conditions and requirements of the economic laws.

The development of needs in producing and nonproducing sectors, including the complex interrelations of science and technology as well as foreign trade influences, is the final cause of structural changes, and equally so for the extensive and intensive type of reproduction. In extensive reproduction need changes are transmitted to the structure of the national economy by way of an almost stationary level of expenditure per unit of product or need. Structural changes in this type of reproduction therefore proceed without any appreciable freeing of manpower, working hours, basic assets and energy or raw material funds. Production factors are the main source of this type of structural change; they are either added to the economic circulation or derive from the redistribution of parts of the existing production apparatus at the expense of simple reproduction. Their technical-economic standard sometimes differs significantly from already operating production factors. Structural changes of this type of reproduction are therefore initiated and carried out largely by way of expansion investments. Unused due to the limitation of resources are the effects of structural changes which could well be developed by the technical-economic renewal of existing basic assets within the scope of their simple reproduction. Scientific-technological innovations occur especially in the expansion sector, while the rate of innovations at the existing material-technical base may lag behind to a significant extent. The inevitable consequence of such a process is the rapid expansion of the product assortment, among other reasons because the disposal of obsolete capital equipment meets objective limits. The effects of the international division of labor within the scope of socialist economic integration are mainly used to meet the quantitative demand and develop those economic proportions which are crucial for the material-technical base of socialism. In these conditions, therefore, no noticeable effects can radiate from the international socialist division of labor, which are directed against the expansion of product assortments in the various national economies.

Reductions in the level of expenditure in economic dimensions usually occur in a mainly extensively growing national economy when structural changes are accompanied

by the distribution and redistribution of total social labor, when the proportions of those products and product groups or services grow, which require a lower level of expenditure than the average of the national economy. Vice versa, structural changes are accompanied by a loss of efficiency when changes occur in the structure of the national economy in favor of those products, product groups, and so on, for the production of which a higher than average expenditure is required.

In the intensive type of reproduction changes in needs are also the final cause of structural changes in production. It is directed to the technical-economic improvement of the standard of products and processes coupled with the more efficient utilization of all qualitative elements of the labor capacity and, moreover, to the assurance of the better satisfaction of needs in the producing and nonproducing sector by the deployment of the same if not fewer resources. The widespread utilization of science and technology assumes a key function in the perfection of the production structure in the intensive type of reproduction.

Changes in needs are transferred to the use of production factors by way of the lowering of the expenditure on the total social labor per unit of product or need, and consequently to the production structure. Insofar the scopes for the perfection of the production structure in the intensive type of reproduction depend on the extent and kind of freeing of production factors. The objective dependence of the scopes for structural changes on the extent and type of the freeing of production factors as a whole or of single production factors according to the urgency of their reuse (manpower, reduction in the specific consumption of energy and materials, improvement of basic asset efficiency) reflects some changes in the operating and utilization conditions of the economic laws. They are at the bottom of structural changes in the transition to the intensive type of expanded socialist reproduction.

In this type of reproduction the perfection of the production structure increasingly proceeds within the scope of simple reproduction. Used here especially are qualitative effects by the speedier technical-economic renewal of the existing production apparatus. The technical-economic renewal of the already operating production apparatus, in turn, is crucial for the utilization of the steadily growing qualitative elements of the social labor capacity--a result of socialist education--beyond the area of expansion and, therefore, more complete. It follows that, with respect to the standard and dynamism of efficiency, the structural change of the national economy in intensively expanded reproduction makes very different demands on the ability to accept and digest scientific-technological innovations than was the case in the extensive type of reproduction.

As we all know advances in the process of intensification are judged by the extent to which the live and embodied labor operating in economic circulation effects greater satisfaction of needs both with regard to quality and quantity. Now and in future such effects will be obtainable in the GDR only when science and technology are fully utilized throughout the national economy, in other words when the possible economic parameters are actually achieved while a balanced relation is observed between basic and improvement innovations. As we know the intensive type of reproduction is based on these basic premises. Its development proceeds by way of the mere conservation of working hours to the conservation of working hours, energy and materials up to and including the end result: The accompaniment of the improvement in productivity by the reduction of energy, materials and basic asset intensity.

As regards structural changes another factor, contributing to further dynamism, is added in the intensive type of reproduction. This derives from the reproductive effects of science and technology and consists in the changes in needs and the extent of their satisfaction--speedier in any case--accompanied by reductions in the level of expenditure. Any reduction in the level of spending resulting from the relative and absolute freeing of production factors is inevitably followed by changes in the cost structure. When, in the process of economic interrelations, we distinguish from this aspect between the production and services structure on the one hand and the cost structure on the other, we note a specific dynamism in the cost structure as well as in the production and services structure. When we further assume that the cost structure of all actual production factors at any stage of economic interrelation corresponds to the production and services structure of another stage--and changes in needs are therefore transmitted to changes in the cost structure and vice versa--we clearly note the following: The perfection of the production structure in intensively expanded socialist reproduction implies requirements qualitatively different from those involved in extensive expanded reproduction, because changes in needs by way of changes in the cost structure do more to affect the structure of the national economy. Moreover, structural changes simultaneously affect the end products (due to changes in needs) and the starting points (substitution) as well as intermediate products (due to changes in the cost structure). These processes objectively require closer interlinking with the effects of the international socialist division of labor within the scope of socialist economic integration, and that in a way which is directed not only to the satisfaction of the quantitative needs of newly emerging products and product groups. This is used much more than in the conditions of the extensive type of reproduction for the economization of the production factors and their deployment in the various national economies. It presumes that, with the aid of socialist economic integration (bilateral or multilateral) products are developed and produced more rapidly and efficiently, the technical-economic standard of which as much as possible exceeds the average standard prevailing in the CEMA member countries. It is more and more imperative for socialist economic integration to be used for the widespread and rapid utilization of basic innovations such as microelectronics. Their multivalent utilization by improvement innovations (products and processes) must attempt to achieve top international standards in selected fields and permanently stabilize them. Furthermore it is possible with respect to certain standard assortments to develop more efficiency reserves by deeper specialization and cooperation, thereby increasingly eliminating the parallel productions which are of little use for each national economy. Opportunities will then present themselves by means of specialization and cooperation to counteract to some extent the proliferation of product assortments. That is an important precondition for effective structural change just as, in turn, the degree of efficiency capable of achievement in the economic structure of the various CEMA member countries largely depends on the workability of socialist economic integration.

Assuming intensive reproduction, stable economic growth cannot in the long run be secured without the perfection of the structures (production and services as well as cost structures). The intensive type of reproduction is based on continuous structural change. Without it intensively expanded reproduction is not operable at all. In other words: Unused reserves in the perfection of the production structure are unused reserves of intensive economic growth. The better utilization of this potential is increasingly coupled with greater demands on the workability of socialist economic integration and its gearing to the new tasks arising, among others, from the transition of the CEMA countries economies to intensively expanded reproduction.

The theoretical problem here is this: In the conditions of intensively expanded reproduction parts of the total social labor, hitherto solidly embedded in traditional manufacture, must be freed either relatively or absolutely. In Marx' meaning what is involved here is "disposable time" which results from the lowering of the expenditure of embodied and live labor per product or need unit. Only a certain part of "disposable time" is used to cut working hours per week, year and working life, depending on the sociopolitical goal. Another and more important part provides the precondition for society being able to use a larger proportion of total labor for the production of means to satisfy socially acknowledged needs of a higher order or for achieving greater need satisfaction. The relative and absolute freeing of production factors is indispensable in order to extend--within the scope of the existing total social labor--the scope for redistribution in favor of greater need satisfaction (possibly, among others, by way of foreign trade also). This is the problem at the heart of structural changes in the transition to intensively expanded reproduction.

No doubt even in conditions of intensively expanded reproduction structural changes result in the quantitative increase of some production factors, such as manpower for example. They seem to be the same as those occurring in the course of extensively expanded reproduction, but this resemblance is illusory. These additional production factors in fact result from the anterior freeing and redistribution. They are production factors which, before being redistributed, already operated in the economic circulation. The fields where productivity rises faster than industrial goods production are, so to speak, the sources of expansion in other fields which, in order to cope with their production targets, must obtain more manpower. On the other hand, whenever investments cause a greater demand for manpower than effective manpower savings, this is tantamount to narrowing the scope for the perfection of the production structure. It will be possible in specific sectors of the national economy to carry out expansion only when manpower, energy and materials are conserved relatively and absolutely, and basic asset intensity is lowered. In the long run serious disruptions in the proportionality conditions of the national economy occur when changes in the production structure, caused by freeing, are not based on the redistribution of the total social labor. Unless that happens, parts of the total social labor are inevitably diverted from the production of specific items needed to meet the productive or individual demand. The strain on resources increases, disrupts proportional conditions and thus encourages extensive development trends instead of assisting intensification. This connection is the more direct the less the opportunities for increasing the manpower available (even if only temporarily) and for quantitatively expanding the supply of energy sources and other raw materials annually. It follows that structural changes in the intensive reproduction process are not alone in being subordinated to other operating conditions and requirements of the laws of economics. The structure of proportionality also is largely based on the lasting reduction in the expenditure of embodied and live labor per unit of product or need, instead of the quantitative growth of production factors.

The production and use of microelectronics in the GDR national economy fully underline this connection. The production of microelectronics does not immediately--and certainly not in all sectors--result in savings of working hours, energy, materials, and so on. The production of semiconductor components, in particular, initially requires additional manpower. Moreover, to a certain extent it is possible for the

capital equipment rate to temporarily decline, because the technical equipment initially grows faster in volume and quality than the output of these new and complex products. The national economy must first provide advances for future efficiency and productivity, which it must materially and financially secure from an adequate store of "disposable time." This store must be constantly reproduced. Relative and absolute freeing, therefore, turns out to be both a condition and the result of structural change in intensively expanded socialist reproduction.

Occasionally we read that stable economic growth and structural change are mutually exclusive always. At times of increased structural change it would thus be necessary to insert a "recovery or consolidation stage" and forego major economic growth. In my opinion this theory is wrong from many aspects. First of all it arouses the impression that structural change is a temporary phenomenon, and that periods of great dynamism must needs be followed by a stage of stagnation. Such a view is championed directly or indirectly by followers of the so-called "cyclical movement" of the socialist reproduction process as an objective movement attributable to scientific-technological progress. In fact it is evident that these advocates mistake the effects of objective processes for effects which are based on the economic decisionmaking sector of investments. When we examine the statistical process of growth, we note certain changes in the growth rates of the 1960's and 1970's in all European member countries of CEMA. However, taking into account a certain time lag, these movements must be attributed more or less to fluctuations in the investment volume and the rate of investments as well as, and not least, the efficiency of investments. When we disregard current cost-raising trends in the energy and raw material field, different rates of investment and the masses of investment in the producing sectors--at a given investment efficiency--correspond to certain movements in the rate of economic growth. If investments lag behind for several years and need to catch up, it is evident that periods of increased investment activity are bound to follow in the interest of stimulating growth impulses. However, this movement is not primarily caused by the objective process of science and technology per se but by the distribution of investments, taking into account internal and external influences in the course of time and on the various sectors and branches.

Structural change is the condition and result of scientific-technological progress. One result of the speed-up of scientific-technological progress is the growing importance of perfect production structures for economic growth. It is important--and, in my view, one of the benefits of socialism--for basic and improvement innovations to be economically utilized in a balanced factual and periodic relation within the respective national economy and, beyond that, the CEMA countries. This is potentially stabilizing with regard to the distribution rates of investments and their efficiency. However, this relation must be based on a total governmental technical policy guided by the currently foreseeable trends of the availability of resources. This total governmental technical policy must orient to the respective technically feasible and economically most favorable combination in the application of techniques suitable for the conservation of working hours, energy, materials and, ultimately, money in those sectors which bring on short-term, medium-term and long-term growth effects. Imperative is the achievement of the unity of short-term, medium-term and long-term effects of science and technology. Is that unity neglected, for instance if the deployment of science and technology by way of investments orients only to short-term growth effects in certain product groups, investment needs in other sectors mount up until the short-term growth effects are exhausted.

To maintain a stable rate of growth an investment push is then required in those sectors where the investment need was not met for some time past. The same unfavorable conditions for stable growth arise when the effects of science and technology are not applied in the short term. This is concretely reflected in the worsening of the capital equipment rate, caused mainly by the decline of investment efficiency. Moreover, the effects arising from the steady economization of working hours, energy and materials consumption would then remain unused, which--just as the growing investment effects--are indispensable for the maintenance of stable growth rates.

In the course of the achievement of the current socialization of production and labor the extent of integration has so increased that short-term, medium-term and long-term effects no longer derive from the use of the new equipment by just one product group or production branch. In fact it arises increasingly from the concentration of the new equipment on product lines important to the national economy, which also take account of the overriding export demands. They are more complex, involve several production and industrial branches and therefore require central state management and planning.

For these reasons structural changes, initiated as planned and taking economic connections into account, do not detract from economic growth. The perfection of the production structure actually tends to act as a catalyst of growth. That holds true particularly when structural changes are accompanied by significant cost reductions, in other words when their economization itself acts as the source of the redistribution of the total social labor. As I will explain in detail later, the empirical course of the 1970's in the GDR confirms this assertion, because the 1970's were a period when relatively advanced economic growth rates were accompanied by quite significant changes in the production structure.

On the Rate of Speed and Some Changes of the Production Structure in the GDR

Many publications correctly claim that the rate of structural change between sectors and branches is slackening. On the other hand dynamism is growing in the micro-structures. Cited as one of the main reasons is the transition to the intensive type of reproduction. It marks a specific stage in the evolution of the quantitative basic proportions of the socialist national economy. Structural changes will now have to proceed more within these basic proportions. Decisive here, the argument runs, is the growing trend toward the technical-economic renewal of the existing production apparatus in place of its quantitative expansion. The trend is assisted by the fact that, within the framework of socialist economic integration, the international socialist division of labor is increasingly extending to products and, additionally, to components and subassemblies. All these reasons are plausible and confirmed by practical experience in the GDR. Nevertheless we need to put into the proper perspective the view according to which future changes will proceed more at the product level and impinge less on the basic structures of the economy. Such caution is advisable especially because the hitherto customary effects of structural changes in the shifts of the proportions of specific branches (product groups and products) relate to production as a whole. That is a production-oriented appraisal of structural change, which is still justified and not replaceable by anything else. However, it does require supplementation by an appraisal more oriented to needs.

The need oriented appraisal of structural changes obtains its theoretical justification from the fact that the use of the total social labor is ultimately oriented to the satisfaction of certain diverse needs or need complexes. Their satisfaction requires differing amounts of social labor. Moreover the same products are suitable for the simultaneous satisfaction of qualitatively different need complexes. It is therefore highly instructive for any appraisal of the economic structure to know how many products (consumer goods or means of production) of the same product group are simultaneously used for meeting the needs of nutrition, education, household furnishings and other need complexes, and must therefore be reproduced. This kind of data is yielded less by a production-oriented appraisal than by one based upon need complexes and classifying the various products and services with these need complexes. It goes without saying that the structural changes reflected in this manner display a totally different quality from those judged by shifts in product or product group shares.

For some time past the Central Institute for Economics at the GDR Academy of Sciences has studied the use of resources by need complexes with the help of reports on interrelationship balances. Since specific results of the 1977 interrelationship balance were processed for that purpose, and it was possible, moreover, to produce a comparability (albeit accompanied by many reservations) with the results of the interdependence balance for 1972 and, to some extent, for 1968, it has been possible empirically to analyze for the nonproductive consumption structure certain changes in the product group structure as well as the cost structure of that period. In the case of the product group nomenclature we are concerned with products or services for supplying the public, grouped by need complexes.

This breakdown by need complexes aims to make available for scientific analysis the extent and proportionality of the distribution of the total social labor to various need complexes and the accompanying changes.

The breakdown of product groups of the interdependence balance by need complexes offers yet another advantage. About 70 percent to 75 percent of all end products of the GDR economy circulate as end products destined for nonproductive consumption. Insofar as data on structural changes with respect to these end products also include certain appraisals of structural changes in the preliminary stages, primary and intermediate products. Structural changes in these preliminary and intermediate stages reflect changes in the cost structures if we investigate not only direct but full costs which relate to products and services and are destined for nonproductive consumption.

Those aspects of the preliminary results of the study⁵ deserve particular emphasis, which exemplify the rate of speed and various main trends of structural changes in the GDR. They may serve to allow further conclusions to be drawn regarding future reproduction theoretical work.

When we break down the production structure to product groups and products and classify them with specific need complexes, we get first a notable dynamism of structural changes in the period 1872-1977. These changes coincide with the inevitabilities of the advance in needs and the extent of their satisfaction. Consequently we note an above average development with regard to growth dynamism for the products and services which are classified with the need complexes transportation/carriage and health/physical culture. Products and services classifiable with the need

complexes education/culture/recreation, information/communication and household furnishings developed at an average rate. On the other hand the development was below average for those⁶ products and services which belong with the need complexes nutrition and clothing.

In the GDR we have seen an even greater advance in the 1970's of the inevitability already noted earlier, according to which the relative share of elementary essential needs⁷ in the total stagnates or even declines in the total structure of (satisfied) needs depending on the respective limit of satiety. While, in the years 1972-1977, the average annual growth rate for the need complexes nutrition, clothing and household furnishings amounted to a total of 4.0 percent (3.3 percent for complex nutrition, 4.4 percent complex clothing, 5.5 percent complex household furnishings). developments proceeded much more dynamically with respect to other need complexes which Marx distinguished from elementary essential needs and considered needs arising from social development, which promote "the cultivation of all qualities of social man...as the ones richest in need because richest in quality and relations."⁸ For these need complexes the total average annual growth rate was 8.9 percent, among this in the complex communication/information 4.9 percent, the complex education/culture/recreation 6.2 percent, the complex health/physical culture 8.5 percent. The largest growth rate was achieved in the complex transportation/carriage: 11.4 percent.

On the basis of these shifts (which occurred within 5 years) in the proportions of the need complexes we witnessed simultaneous and substantial changes in the basic relation between elementary essential needs and needs of a higher order. The proportion in the total of need complexes of nutrition, clothing and household furnishings declined from 75.5 percent to 71.1 percent. That was due mainly to the relative decline in the growth of those products and services which are to be classified with the need complex nutrition. It turns out that considerable changes occurred in that period in the macrostructures of the national economy--if appraised from the standpoint of needs. This development is most likely to continue in future also.

As we already stated, changes in the product and services structure are accompanied in intensively expanded reproduction by changes in the cost structure. What was that dynamism in the same period?

The cost structure was initially analyzed by the intensity of the gross product for the product destined for consumption in accordance with the full expenditure of live labor and capital equipment by the respective product groups, and these latter were in turn classified with specific need complexes. By this reckoning the intensity of the gross product for the manufacture of products destined for consumption has further risen from 1968 to 1977. For well known and frequently discussed reasons it is not possible, though, to conclude specific trends of energy and materials consumption. In the same way the increase in the intensity of the gross product may be attributed to the increase in the social division of labor and cooperation. In view of the growing importance of reductions in production consumption for future economic growth, economic analyses here show an unfortunate gap. Though the analysis of specific energy and materials expenditure is extremely important and irreplaceable, it does always relate to only one stage of production. It is therefore impossible to conclude from development trends of specific energy and materials expenditure to

analogous trends of total expenditures related to the respective end product. As far as they are primarily influenced by energy and materials consumption, data on the movement of specific expenditures are applicable to only a limited extent to the analysis of total economic efficiency trends. It does matter very much, for example, for the appraisal of economic interlinks at which stage of production the specific expenditures are realized. The effect on the total economy is markedly different when the specific expenditure is lowered more in the processing and less in the extractive stages, and vice versa. This different effect results from the differentiated technical-economic intensity by which the various stages of production are linked to one another, from the extractive stage by way of the processing stages up to the end product. The computation of economic efficiency variants therefore turns out to be an urgent requirement when we are dealing with structure changing developmental trends which display an advanced degree of these technical-economic links. Such a structure changing development, for example, is the refinement of raw materials because it should, in principle, range from the basic raw material by way of intermediate products to the end product. Still, the following continues to be interesting with regard to the development of the intensity of the gross product for the product of consumption: In view of the advanced extent of interrelationship in the national economy of the GDR 2.7 times more of the gross product must be available in order materially to secure the product and services for public consumption!

The dynamism of the intensity of the total expenditure of live labor for the manufacture of the products of consumption yields a very different picture than the development of the intensity of the gross product in the products for consumption. Within the cost structure it turned out to be the most flexible element. It follows that advances in intensification were achieved in this period mainly by labor saving measures. In 1972 50.3 workers were needed to turn out M1 million's worth of products and services in the complexes clothing and educational needs. In these two areas the same output volume for consumption was made available with 19 and 21 fewer workers respectively. In the complex nutrition five fewer workers were needed in 1977 by comparison with 1973 to make available the same volume of goods. The total expenditure of manpower declined more rapidly for all need complexes other than goods which are classified with elementary essential goods. Already in 1977 total expenditure of live labor for products of these need complexes was below the average of the national economy, while the total expenditure of live labor for products of the nutrition complexes exceeded the average expenditure for the products of all need complexes. However, I do not intend this statement to be regarded as the basis of a moralizing lecture. In the GDR the economic effects and political significance of the stable supply to the public of basic foods are well known and highly esteemed. Involved in it, as we know, is not only agriculture but many other branches and sectors of the national economy. Nevertheless this finding is important for future structural changes insofar as a possible relative decline in the growth of products for the complex nutrition--with respect to the full expenditure of manpower--would produce positive effect in the cost structure of the national economy.

In addition to the perfection of the product structure a great deal of dynamism is evident in the movement of the full expenditure of manpower in all need complexes. This lends support to the initially forwarded assumption that structural change in the intensified type of reproduction results not only from changes in needs but is equally carried by changes in expenditure structures.

Far minor, on the other hand, are the changes in the cost structure caused by the total expenditure of capital goods. In the period under review we noted a rise in the intensity of the total capital basic asset expenditure from 2.4 to 2.5 (expenditure on capital goods per 1 million consumer goods). Basic asset intensity rose fastest for products of the nutrition complex, though this greater expenditure of basic assets was accompanied only by a reduction of five workers in the total expenditure of live labor. The manufacture of goods for the nutrition complex takes up a significant part of the total expenditure on the national economy's basic assets (about 44 percent). That is why the increase in basic asset intensity in the nutrition complex has substantially affected the development of the total expenditure on basic assets in all need complexes. The causes of this originate not only in the developments which occurred in the nutrition complex. However, in no other need complex did the total basic asset expenditure undergo such a development which adversely affected the national economy. Reflected herein again is the standard achieved in the extent of intensification in the producing sectors. Involved is a labor saving type of intensification in the course of which basic asset intensity rose also. With respect to the fundamental efficiency relations this degree of intensification reflects the uninterrupted rise in productivity. However, this improvement in productivity was outshone by an even faster rise in basic assets per employee in the producing sectors. That affected the expenditure structures of live and embodied labor, of nonrecurrent and current expenditures and, therefore, the scope of structural changes.

I must point out here that the intensity of the total basic asset expenditure for products classified with the need complexes health/physical culture and transportation/carriage has so far been above the average of the economy. In other words, potential structural changes in favor of these products may well produce adverse structural effects with respect to the total expenditure of basic assets for consumption.

The different dynamism of structural changes with regard to products for public consumption on the one hand and the total expenditure of manpower and basic assets on the other has produced a redistribution of the total social labor to the various need complexes in the same period of time. This must be equated with a significant change in the deployment of resources. While, in 1972, 76.2 percent of gross production, 74.9 percent of the total manpower expenditure and 70.8 percent of the basic asset expenditure were tied down for the satisfaction of nutritional, clothing and housing needs, the comparable figures for 1977 were 72.2 percent for gross production, 72.8 percent for the total manpower expenditure and 69.0 percent for the total basic asset expenditure.

In 1977, compared to 1972, it was possible to distribute a larger proportion of the total social labor to need complexes which no longer involved elementary essential needs. In addition to the lowering of social working hours per unit of product or need, the extent of the redistribution of the total social labor in favor of needs of a higher order is an important element of the law of the management of time. Marx emphasized that the satisfaction of different needs requires different amounts of work. He pointed out very clearly that there is no connection between the urgency (usefulness) of a need complex and the amount of the expenditure of total social labor, expressed in value categories (price, costs, wages). "At any given basis of the productivity labor the manufacture of a specific quantity of items in any

sphere of production requires a specific quantity of social labor time, although this relation varies considerably in different spheres of production and has no inherent link with the usefulness of these items or the special nature of their use values."⁹ Insofar it makes no sense in economic terms to compare the productivity of two use values which serve the satisfaction of qualitatively different social needs. Inappropriate, therefore, is the one-sided comparison between the different levels of expenditure for different need complexes, for example the level of expenditure in the nutrition complex and its comparison with the levels prevailing in the passenger transport or clothing complex. It is imperative to lower the specific and total expenditure per unit of product or product item in all need complexes. Different, including natural, factors affect productivity and efficiency conditions so that the expenditure involved in freeing one worker is greater in the one than in the other complex. Moreover, scientific-technological progress can be realized only at different speeds in different sectors and branches of the national economy. This also results in differentiated productivity and efficiency conditions with respect to the manufacture of products for different need complexes.

Marx included in the definition of the law of the management of time not only the saving of working hours per product unit but also its distribution and redistribution to the various need complexes. He pointed out that productivity and efficiency are developed more highly--in other words the management of time has achieved greater maturity--the lower the proportion of the total social labor which must be expended for the satisfaction of elementary essential needs and the higher the share of the total social labor left for the production of goods and services to satisfy needs of a higher order. Expressed here in a specific (need oriented) manner is the relation between necessary and increased working hours, between necessary and surplus product.¹⁰

This inevitable process of the management of time is based on a permanent structural change due to expanded socialist reproduction and therefore displays certain common features in both the extensive and intensive type of reproduction. However, each type of reproduction also has its own special features, in particular with regard to structural change. Further theoretical and empirical analyses are needed for various aspects, in particular the aspect of the interrelationship between structural change and proportionality in intensively expanded reproduction, the growing role of those sectors and branches upon which depend the capacity and mobility of various production factors (the technical and social infrastructure). Such consequences arise from the intensive interrelations between the economic operation of science and technology, the use of resources, the development and satisfaction of needs, and the type of reproduction. These interrelations deserve greater attention in future reproduction-theoretical research just because the SED's economic strategy is based on their scientific analysis

FOOTNOTES

1. See Ninth SED Congress, "Programm der SED" [SED Program], Dietz Verlag, Berlin 1976, p 27.
2. I would like to indicate here the even now relevant study by G. Schulz, "Technische Revolution und Strukturwandel in der Industrie" [Technical Revolution and Structural Change in Industry], Dietz Verlag, Berlin 1966.

3. See Marx "Das Kapital," K. Marx/F. Engels, Collected Works, Dietz Verlag, Berlin 1956-1968, Vol 23, p 386.
4. Ibid, Vol 25, p 197.
5. These research results are part of a study prepared by a collective of scientific staffs at the Central Institute for Economics, GDR Academy of Sciences, headed by Dr U. Ludwig.
6. It is necessary here to point out certain inadequacies in the significance of the interdependence balance. The services to need satisfaction of nonproducing sectors are not fully reported, for instance. The share of these sectors in the realization of the social profit is far greater than represented by their consumption of productive services and material. This inadequacy is due less to the interdependence balance itself than to a hitherto unresolved basic problem of the political economics of socialism.
7. Marx includes among the elementary essential needs "first of all eating and drinking, housing, clothing and some other items," and holds that the production of the means of their satisfaction "is a fundamental condition of all history, which must be daily and hourly met now as it was thousands of year ago in order simply to keep people alive." (K. Marx/F. Engels, "Die Deutsche Ideologie" /The German Ideology/, as before, Vol 3, p 28.
8. K. Marx, "Grundrisse der Kritik der Politischen Oekonomie" /Outlines of the Critique of Political Economics7/, Dietz Verlag, Berlin 1953, p 312.
9. K. Marx, "Das Kapital," as before, Vol 25, p 196.
10. Ibid, Vol 23, p 536.

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IMPLEMENTATION OF 1981 ECONOMIC PLAN VIEWED

Budapest TARSADALMI SZEMLE in Hungarian No 7, Jul 81 pp 3-12

[Article by Ferenc Havasi: "Experiences and Future Tasks in the Implementation of the 1981 Economic Plan"*]

[Text] Realization of the resolutions by the 12th Congress stands at the center of our activity. We are experiencing many positive manifestations of this in areas of social, economic and cultural life. This was given expression to at the political program series for preparing the KISZ congress and at the KISZ congress itself.

A faithful expression of respect for the work and of our political sense of responsibility was that at the end of April and the beginning of May several hundred collectives and more than 300,000 persons received flags, documents and the accompanying decorations and awards of the Congress for work achievements in 1980 and the past 5 years and in the Council of Ministers, and the National Council of Trade Unions.

Our internal political situation is characterized by a balanced, calm atmosphere, confidence in the party's policies, readiness for action, and a will to perform.

The central question of our social life is economic building work. To define more exactly our future tasks, in conformity with our practice, it is justified that we should be informed and have a picture of our experiences thus far in the development of the economy, and moreover know what kind of tasks the prescribed improvement of the equilibrium situation and the requirement to protect living standards will place before us in the remaining months of the year.

The preparation and implementation of the 1981 economic plan is in harmony with 1979-1980 economic guidance practice and goals of the Sixth Five-Year Plan. The beginning of work this year was smooth and more organized than in previous years. A role was played in this by the fact that in the past year the enterprises acquired experience in the operation of the price and regulatory system, and adapted themselves more and more to the stricter requirements. The managing organizations prepared in the second half of the past year their mid-term plan concepts,

*Edited text of a talk presented at the 18 June 1981 session of the Central Committee.

and a significant share familiarized themselves with the main requirements of our economic development before the approval of the economic plan. The central directive organs continuously analyzed experiences in the operation of the price and regulatory system, its effect on enterprise management, and made the necessary adjustments in time.

Despite the favorable circumstances, however, there were factors which made our work more difficult. One of these was that last year our national income did not grow, rather it declined by about 1 percent. Further problems were caused by the fact that a part of our autumn work in agriculture was left over for the spring season, and also by the fact that the unevenly distributed precipitation, the April frosts, the spring drought and heat did not favor crops for summer ripening.

Several external factors also have an unfavorable influence on 1981 economic development. The recession in the capitalist world economy is becoming more prolonged and stronger. The crisis situation in certain branches, for example in the steel and plastics industries and in certain areas of the light industry, has been accompanied by a deterioration in our marketing possibilities.

Only by considering all these circumstances is it possible realistically to evaluate development results and experiences thus far. But it can already be stated that realizing the goals in this year's plan is representing a greater than expected task.

The Development of Production and Marketing

Since the experiences of 5 months are available, this must understandably be taken into account in making deductions. According to our experiences, the economy this year is developing in harmony with the main requirements of the plan.

The foreign economic equilibrium situation has developed close to estimates. Exports in both main relations have increased relatively rapidly by about 8 percent in all, and imports exceed somewhat those of last year. In domestic consumption, signs of a revival are evident which exceed distributable sources. The monetary income of the population and the commodity purchases rose somewhat more than planned, while enterprise investments increased by about 2 percent as compared to an estimated decline. Considering also the worsening foreign market conditions, the performance of the economy thus far is not adequate for the combined, secure realization of the main goals of the plan and to further improve the equilibrium situation.

In the first 5 months of the year, industrial production lagged behind the plan and increased by about 2 percent. Production in the individual branches developed in a differentiated way. Among the main industrial branches production increased in the chemical industry, in the electrical energy, machine and light industries, and in the food industry. Production in mining, metallurgy, and the construction material industry declined in accordance with marketing possibilities. Work productivity increased more than production. The material, energy and manpower conditions of production are assured. Because of material deliveries at an inadequate rate and because of cooperation weaknesses, inventories are greater than necessary at some places.

Industrial marketing rose more rapidly than production. Domestic marketing significantly exceeds the plan and last year's level, while export marketing only approximates last year's level. Thus up to now the marketing structure has not developed in accordance with plan goals and equilibrium requirements. The ruble account exports of industry are substantially greater than last year. Nonruble exports are lagging behind those of last year. Exports of the light and machine industries have declined, and metallurgical exports have declined to about two-thirds, while capitalist exports of the food and chemical industries have increased significantly. The lag in nonruble accounted exports is due partly to the lack of economically exportable commodity bases and partly to the slack demand on the market for raw and basic materials and finished products.

It is becoming more and more difficult to grade the development of industrial production by data indicating growth alone. An extremely differentiated development lurks behind average growth. Within the chemical industry, for example, the petroleum refining industry has produced less in the first 5 months than last year, and this has a restraining influence on the growth of industry as a whole. But this cannot be condemned because in the meantime there has been a decline in the demand for petroleum products, or in the fuel oil requirement.

One of the causes for the moderated increase in the growth of industrial production is the fact that machine industry production has lagged behind the plan. Within the machine industry as well there has been a more rapid increase in the equipment and communications technology industry, while the manufacture of transportation means has essentially stagnated, and as compared to last year's already low level the production of metalware has also declined. The machine industry enterprises have also increased their marketing in domestic trade. Ruble account exports increased significantly. Problems of a different nature influence the development of production in iron metallurgy. Production in iron metallurgy, as compared to last year's low level, declined by about 4 percent. The basic cause is that the prolongation of the capitalist steel industry crisis has made marketing more difficult. In addition, the more moderate production in the machine and building industries also decreased the domestic demands for iron metallurgy products.

A contradictory situation is also evident on the construction market. Because of the modifications in demand on the building industry, there is at one and the same time a capacity shortage and surplus. Despite a moderating demand on the whole, the total of rejected building demands in the capital city has increased. Production as a whole has continued to decline. The productivity level in the cooperative sector, in transportation and the hydraulic construction industry enterprises has improved, while in a greater part of the state and council enterprises it has continued to decline. A role is played in the decline in production and productivity by a slow adjustment to the changing structure of demand, by personnel reduction, or by an inadequate improvement in organization. It is favorable development, however, that the ratio of maintenance activity has improved somewhat in accordance with goals.

Transportation has carried out its task. Achievements in commodity deliveries and passenger transport have risen nearly as planned. In passenger transport, individual transport vehicles has moderated, and mass transportation usage and the

number of riders has increased. Among other things, this was prompted by the January increase in the price of gasoline, in response to which gasoline consumption in the first 4 months of the year was 8 percent less than a year ago.

Agriculture and the food industry face increased tasks, and the necessary steps have been taken to carry these out. The farms recognized the goals of the plan in time. For the attainment of these goals, measures were taken to help develop and stimulate the production in the meat, poultry and sugar industries.

The area for autumn grains, including wheat, is 106,000 hectares less than planned, and apparently the corn area will also fall behind by a small degree. The sowing area for spring barley and oats has been increased. The sowing area for all grains is expected to be 70,000 to 90,000 hectares less than planned, but at the same time the area for sunflowers and sugar beets will be 46,000 hectares more.

The late plowing in autumn was a favorable time for supplementing soil preparation, and the farms performed the sowing in time and in good quality. At the same time, the lack of precipitation delayed the development of autumn grains and the sprouting of spring grains. Attainment of a production average of 45 quintals per hectare in autumn wheat cannot be expected. The condition of crops sown in spring corresponds to the average over many years. Contract signing for fruit and vegetables has been concluded. The enterprises have contracted for the planned volume, and in fact have exceeded it by 6 to 7 percent.

Livestocks have developed favorably. According to the March animal census, there were 16,000 more cattle than for the same period in the previous year. The stock of cows and first-gravid heifers has increased. There are 2.7 percent fewer hogs than a year ago, but the number of sows has increased by a small degree. In response to measures, the trend toward hog breeding has revived, which is also shown by the fact that sow stocks at small producers have increased by 12,000 heads. Contracts have met basic plan goals as related to the purchase of slaughter animals and animal products.

The fodder supply is in general balanced, and we have adequate reserves available until the new crops. All this affords an opportunity to reduce the short-falls which are evident in crop production and to approach the annual production plan in agriculture. But to do this, we have to take numerous measures to supplement production and revenue lags, including the possible avoidance of losses in harvesting.

On the basis of the contracts or the commodity production of agriculture as a whole, the production plan of the food industry can also be fulfilled.

In the elapsed months of the year thus far, energy consumption has been less than it was last year. But within total energy consumption the use of electric energy increased by 4 percent as compared to the year before. Electric energy consumption per household will increase again this year following a moderation after the price rise.

There were no considerable difficulties in the energy supply, only in the case of coal there were some selected problems. Reduction of the energy demand must be continued, in fact accelerated, to implement the energy management program for the Sixth Five-Year Plan. We must call attention to this because, for example, most of the proposals developed thus far in industry for energy rationalization have had as their goal the replacement of petroleum and petroleum products primarily with natural gas, and chiefly through the use of central monetary assets. There are relatively few proposals which would link realization of the program to the use of individual resources or bank credits. Experiences in agriculture have been more favorable.

Manpower Management--Population's Income--Investment

The trends which developed in the past year in manpower management have continued, or have become stronger. The manpower situation is in general balanced, and demands for manpower have continued to moderate. In the material branches, the decline in personnel exceeds by a small extent what is called for on an annual level. This includes an increase of personnel in water management and agricultural cooperatives, and a reduction in the other branches. In the first 4 months of the year, the number of those employed in socialist industry declined by 34,000 or 2.1 percent, as compared to last year. In the construction industry, on the other hand, the number of employed declined by 3.4 percent in the same period.

The managing organizations are using internal regrouping in more narrow scope than in previous years. Most of the measures serve to increase capitalist export and satisfy the manpower requirements for new investments.

Despite the moderation of manpower demands, there continues to be a significant manpower shortage in certain areas—for example, in the capital city, the building industry, the retail store network, and in certain areas of transportation. Moreover, there is a shortage in the textile industry of spinners and weavers and unskilled and semi-skilled workers. It is characteristic that organizational measures are not sufficiently used to reduce the manpower shortage or to release superfluous manpower.

The monetary income of the population rose at a rate of 6.6 percent, exceeding the estimated rate for the whole year, and wage and wage-type incomes rose by 5 percent. Receipts from agriculture rose by 7.7 percent. Savings by the population exceed those of the preceding year.

In the material branches, average earnings thus far, as compared to the same period for the preceding year, rose by 6 to 6.5 percent, somewhat greater than estimated. Because of the manpower reduction in industry and the construction industry, the wage fund increased more moderately, but it still exceeds the target. Since according to the signs, the wage payments have risen more than planned, although economic resources do not meet the estimates, we must create a stricter relationship between wages and accomplishments. Properly so in the course of wage developments this year, advantages were given to those working under unfavorable conditions, to those performing heavy physical labor, to those employed in shortage skills, and to experts fulfilling key roles in enterprise management. About one-fourth of those employed did not share in wage development. The strengthening of

differentiation in wage development is a favorable phenomenon, but we must see to it that the differentiation is not an end to itself but is related closely to accomplishment.

In the first 5 months, the balance between the commodity base and purchasing power was assured, and the commodity supply improved somewhat. Retail commodity trade expanded by about 4 percent, more rapidly than planned for the whole year. Trade in industrial products increased more strongly, and the sale of food products and the demand for restaurant services increased more moderately. There was a good supply of potatoes, vegetables and fruit. The population also bought more out-of-season fruit and vegetables than last year. A role was played in this by the fact that the price level of vegetables was 18 percent lower in the first 4 months of the year than a year ago, and the price level of fruit 6 percent lower. In the remaining months of the year, the supply of sour cherries, sweet cherries, and apricots will be weaker than last year whereas in other fruit and in the basic vegetables a good supply is expected.

The supply of industrial products has improved, nevertheless, there is a shortage in many products. Industrial delivery capability is improved, but the delivery of some products did not meet demand, primarily a number of household appliances, color television sets, and outer clothing items; the reasons given were material supply and cooperation problems, or in some cases export obligations. The material supply for building projects by the population were adequate, shortages being limited to only several products.

Considering the magnitude and composition of the commodity inventories, a balanced commodity supply for the population can be expected in the remaining part of the year.

The trend which has developed during the past year or two in foreign tourism has continued. In the first 4 months of the year, as compared to the same period for the year before, 15 percent more, or 1 million 300,000 tourists, arrived in Hungary, and 1 million Hungarian citizens travelled abroad.

The consumer price level rose by 3.8 percent in the first 4 months of the year. The central price measures for January were carried out according to plan. In the first 4 months of the year there were also price increases of broader scope than previously. Among other things, the prices were reduced on certain underwear items, bicycles, washing machines, camping items, and watches. The season-end sale of clothing items was more significant than the year before. As of May, consumer prices were reduced on certain iron and technical products, and on some paints. The mid-year implementation of official consumer prices and socio-political measures was carried out on the basis of careful preparation. Considering all these things, it is expected that the consumer price level will be 4.5 to 5 percent higher than in the previous year, or as planned.

In the first 5 months of the year, 5 percent less was paid out for investments than in the same period a year ago. This included less expenditures on state investments than last year or than planned. Payments for enterprise investments exceed last year's level somewhat, and also the estimate in the plan. It is a favorable fact that the ratio of construction has been moderated. A change is

indicated in that a significant share of the enterprise investments are financed exclusively from their own development means.

During the 5 months, we devoted about 5 percent less for large investments than in the previous year. After a 2-year interruption, we shall begin large investments once more; among these, the reconstruction of the Szolnok Paper Factory, the widening of the Arpad Bridge, and the reorganization of Florian Circle has begun. In addition, the preparation of three other large investments is underway--the Many mining operation, the coking plant of the Danubian Iron Works, and the expansion of the Mecsek coking coal production. It is our interest to see that the large investments planned for completion this year will be ready by the deadline; these include the Recsk mining research facilities, the reconstruction of the Hungarian Roller Bearing Works, the Szikra Newspaper Printing Plant, phase II of the Kiskor locks, and the large Budapest Sports Hall. We have devoted about 20 percent less than last year for special purpose and other state investments. In both decision spheres, relatively few new investments were begun. In weighing the 1981 financial possibilities, measures were taken to moderate investment purchasing power in the case of other state investments; and in the case of special purpose investments steps were taken for the sequestering of obligatory reserves. Thus the level of state investments is expected to develop about as planned.

We must also strive to see that the level of enterprise investments develop as planned. We must avoid the development of another "investment peak" by 1982. By allowing of economic production a free course of development we must regulate and guarantee the planned accumulation ratios.

Experiences in the Operation of the Price and Regulator System

Our experiences this year and last year alike show that the new price and regulator system introduced on 1 January 1980 is basically suited for the realization of our economic political goals.

In response to the operation of the price system, the structure of net income and of costs was revised. In 1980, the prices for basic materials and energy sources rose by 15 percent, and in 1981 the prices for energy sources again rose by 14 percent; we raised agricultural procurement prices by 5 percent and reduced the price of iron metallurgy products by 5 percent in accordance with world market price ratios, and costs. The increase in the producer price level has not automatically appeared in the prices of finished products. For example, the 15 percent price rise for basic material and energy sources in 1980 was accompanied by a 4 percent increase in the price of finished industrial products. The increase in the price of finished goods is restricted by adjustments to world market prices as is the amount of profits from foreign trade prices. This gives incentive to the enterprises to modernize, and to improve quality of management, and material and energy economization. In the noncompetitive areas the price increases are regulated by official measures.

Enterprises are trying more than before to counter the cost increases stemming from foreign market price changes by reducing expenditures, and they are making better use of cyclical price increase possibilities on the foreign markets. They have

cut back on the most uneconomic exports. These are proper efforts, but it must be noted that the real advantages come if the volume of export growth in profitable export is greater than the extent to which uneconomic exports were reduced. In exports we must in the future improve the combined realization of interests linked to profitability and volume.

With the introduction of the new price formation in the processing industry, foreign and domestic prices as well as export efficiency, development sources and profitability become more closely related than before. The enterprises' incentive has increased as a result of increased export prices and the improvement of the commodity structure. The relationship of producer and consumer prices has improved, and we have realized with the export of basic consumer items the necessary price movements, even if belatedly and moderately.

The Main Tasks of Planning and Economic Guidance

On the basis of the economic processes in the first 5 months and the trends that may be considered, a clear forecast of economic development extending over the whole year cannot as yet be made. The development of the 1981 economic processes can be significantly influenced by possible changes in the international political and economic situation as well as by weather factors affecting agricultural production.

The equilibrium situation has developed favorably thus far but we have realized the following: if resources expand less than planned, if the domestic demand continues to grow, and wage expenditures are not proportionate to output, then the danger exists that the domestic consumption of the national income will increase, and this would contradict our equilibrium efforts. Therefore, we need such planning and management as will avert this.

What kind of measures are necessary?

--Above all, the kind which in process will establish the basis in the following years to further improve and consolidate the economic equilibrium, and will assure the rapid growth of profitable, nonruble account exports, the planned development of socialist trade and balance;

--the kind which will more consistently realize the accepted pricing principle; increase the ability of profit to express efficiency; assure further restraint in the use of special supports; promote a more rapid development of enterprises that operate profitably, and promote efficient management and energy and material conservation;

--the kind which will properly regulate investment purchasing power, inventory growth; strengthen the relationship between wage expenditures and increased performance;

--the kind which will promote a further reduction of expenditures, or moderate their increase.

The state organs have begun to work out the above measures. The administrative organs will decide on their introduction in time.

In the course of the past year--partly in relation to the economic political line implemented in 1979 and partly to the increase in more flexible adjustability with constantly changing circumstances--many decisions were made to rationalize guidance and management. The experiences in their implementation were the following:

The establishment of the Ministry of Culture occurred in harmony with the development of government administration. The continuous carrying out of tasks was assured. The merger resulted in material savings and reductions in manpower.

The establishment of the organization of the Ministry of Industry took place at the end of January of this year. With the assurance of personnel, material and technical conditions and the establishment of ties with the associated organs and enterprises, the necessary conditions exist for operation. With the completion of internal organization, the way exists for more efficient industrial policy, directive and supervisory work to be conducted in harmony with the economic political goals and the requirement system of the Sixth Five-Year Plan. The new ministry has about 600 fewer personnel than the former three ministries. The savings in 1981, while reorganization costs are still occurring, will come to about 18 million forints; as of 1982, the annual savings will come to 50 to 55 million forints. In addition, the organizational merger of the so-called support institutions which is underway will result in a savings, the extent of which cannot as yet be exactly measured.

It became evident in recent years that some of the enterprise, mid-level directive organs have become superfluous, and the enterprises belonging to their organization are suited for independent management.

The reorganization tasks will begin in the middle of 1980, and thus we have little in the way of experience regarding their effort. Among other things, six trust organizations and two large enterprises were eliminated, and a total of 78 independent enterprises were established. This work is continuing, and at present the investigation of food industry trusts and large enterprises is being conducted. At a significant share of the units which have become independent, the experiences are favorable, for example, at the Ajka Glass Factory, the Battery and Dry Cell Factory, and most of the wine, sugar and tobacco industry enterprises. There are enterprises where difficulties are appearing in sharing the poverty and incentive funds and the existing financial burdens; but these problems also existed in the large organization, and the organizational change merely brought them more sharply to focus.

The reorganization of the large enterprises also had the effect of starting the development of an incentive system and the reduction of administration at those enterprises where reorganization did not take place.

A decision was made on the introduction of the five-day work week. An essential feature of this is that the length of the legal working time must be set at 40 to 42 hours for workers in several shifts and in a continuous work schedule; the 42

hours of working time, on the other hand, for workers in one shift must be interpreted in terms of a yearly average. At the managing organizations it is necessary to fix in the collective contracts that the annual working time base is fulfilled by lengthening the daily working time, or by work done on certain free days. The rules for granting vacations will not change in 1981.

The prescribed tasks were fulfilled on schedule, and the reorganization is proceeding according to the planned pace. According to information available thus far, economic units within 60 enterprises are planning to introduce the five-day work week on 1 July 1981. The change affects 218,000 workers. Experiences thus far indicate that the population is receiving the introduction of the five-day work week favorably. It is also being realized everywhere that lunch time comes from the working time. In various areas there are indications of difficulties in realizing the transformation from their own resources. In this regard, we must adhere to the position that has been developed, namely, that for the introduction of the new schedule self resources are basic. Central support can be given only in highly justifiable and exceptional cases.

With office allocations carried out in the framework of space management, we bridged some problems which, in part, could have been solved only through significant investments. Changes serving the goal of rationalization have thus far saved about 1.7 billion forints in investments.

This year we started to introduce in state and cooperative trade the fixed sum accounting system and extended the possibility of a lease to state restaurants. Experiences thus far have been favorable, although these can be summarized only on the basis of a short time period. In the 4 month period, they announced 1,428 operations, approximately 4 percent of the total szabadkasszas units, most of these for fixed sum operation, and a few for operation by lease. A total of 1,609 applications were submitted. Up to now, 654 operations have been given over. Among these there were competitive biddings in 230 cases, in the course of which the profit included in the contract price was increased by 16 percent. The profit in contracts for operations turned over thus far in most cases is double what it was before.

The introduction of the new form of operation has not caused any transitional problems as yet, not even in supply. The search for items in shortage and for less expensive supplies has become more active. The goods selection has improved, and the scope of items in trade has expanded. Trade of businesses has increased by 5 to 20 percent, and the number of complaints has decreased. Because of better adjustment to customer habits, business hours have been increased. Administrative work in the operations has declined significantly.

Since January 1980 measures have been continuously implemented to modify the use of passenger cars. Restriction on the private use of cars, or elimination, the surrender or exchange of 800 Western-type cars, the reduction in the number of general-use cars has resulted thus far in a savings of 130 million forints, and we are counting on an annual savings of 320 million forints beginning in 1981.

Two measures introduced last winter have had a good, perceptible effect on gasoline savings. In November of last year we terminated the gasoline allotment system and made the consumption fuel norms more strict. On the basis of new norms, we introduced a cash accounting system. In response to this, gasoline sales declined by 12 percent in the fourth quarter of 1980 as compared to the same period a year ago.

In 1980 when we changed to summer daylight saving time we estimated that the lengthening of the natural lighting time in the spring-summer period would make it possible to reduce the consumption of electric energy by 80 to 90 million kilowatt hours. Actually, we saved 110 million kilowatt hours in this period, which is the equivalent of 1.3 day's consumption in the whole country. It is expected that daylight saving time this summer will again have the same results.

The administrative ban on personnel increases and measures requiring a 5 percent personnel reduction in administrative organizations have achieved their goals. Personnel increases have been ended both in the directing organs and in the administrative apparatuses of enterprises, and in fact there has even been a decrease.

Between 1975 and 1980, the number of those employed at enterprises and cooperatives in financial, accounting and management jobs declined by about 19,000 workers. Personnel in administrative organizations, ministries, national organs and councils declined between 1976 and 1980 by 6.2 percent, or 3,545 workers. On the basis of measures that were worked out, the managing organizations and institutions are supplementing manpower by rationalizing organization, rational concentration of tasks, functions and spheres of authority, and better work organization, and internal regroupings.

Implementation of the Council of Ministers' resolution on the modernization of the research network is in process. Those who are working out proposals for further improvement are led by the intent to increase the efficiency and results of the research institute network and the level of scientific research-development work, strengthen the link between research-development and practice, accelerate the utilization of scientific results, and bring research work in better adjustment to the changing requirements.

Following circumspect preparatory work, state resolutions in the past year have designated the measures to be taken in 1981 to 1983. Their implementation has begun. Significant organizational changes will begin in 1982. As a result of the planned measures, the number of those employed in research institutes will decline from 36,000 to about 26,000 persons, and at the same time new development enterprises will be established. Enterprise development and the personnel and objective conditions of university research will be improved.

For successful implementation, it is necessary that the appropriate party and state organs, in harmony with the measures already under way, should deal incisively with problems regarding the long-term development of the research network.

Efforts in recent years in the field of economic building work have not been in vain. Summarizing the experiences of the first 5 months, it can be stated that despite the external difficulties the 1981 plan can be fulfilled. To do this, we need more consistent work in every area of management with greater efficiency, and more rapid progress. We can also be confident in the future that with the active support of our people and a unified will we can successfully solve this year's tasks and strengthen the bases for our further advance.

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ENTERPRISES EQUITIES MAY BECOME LEGALLY LIABLE

Budapest MAGYAR HIRLAP in Hungarian 22 Jul 81 p 5

[Article by Balazs Stepan: "The Labyrinths of Economic Fines; A Rare Bird in the Legal Process"]

[Text] "Since the previous investigation the enterprise has taken measures to eliminate earlier errors and to avoid future ones." This nice sounding promise comes from an appeal sent to the Economic Collegium of the Supreme Court. The judgment, handed down in December 1979, had obliged the Tool and Small Machine Marketing Enterprise to pay an economic fine of more than 19 million forints because--as was subsequently proven--it had made dishonest profits of 34 million forints in 1977 and of 61 million forints in 1978, with illegal price setting. In any case, despite what was written in the appeal, the dishonest profits were not without antecedents; the enterprise had already paid a fine of more than 10 million forints for price concessions received but not passed on in 1975 and 1976. The irregularity was discovered by the receipts main directorate of the Ministry of Finance in August 1979 and the penalty was initiated. The case can be called typical, in regard to the irregularity committed and in regard to the initiation of the case.

Fewer Every Year

Economic fine. The legal expert says that the regulation is modern, faithfully expresses the requirements of management and takes care of penalizing irregular economic acts in a broad sphere; but its implementation and practical application get hung up. The judge shrugs his shoulders; he is powerless. The court does not reject a single justified and well-founded penalty motion. The layman is amazed--economic fine? It is as rare as a white cow, he has not met with a single one in the course of his career.

In 1973 the Council of Ministers modified the regulation governing economic fines. It extended the types of behaviors which could be punished. For 2 years the courts received a good bit more motions than before but after 1973 their number again decreased. On the basis of experience the Council of Ministers again modified the regulation in 1979.

A fine can be levied on a management organization which, misusing its power advantage in its contractual relationships, regularly takes unjustified advantages and

fails to regulate its economic contacts in appropriate contracts or, misuses its power advantage to prevent the other party from realizing a justified demand against it. But a fine can also be levied in the case of repeated [infractions] or for significant sized claims if the injured enterprise cannot make good the claim, by means of legal action. Protection of consumer interests, protection of the decent contractual relations among management organs and intervention to aid or enforce correct fulfillment have come into the foreground.

In 1975 the courts discussed 65 economic penalties. Since then there have been fewer every year. In 2 years there were 27; last year a total of ten came before the Economic Collegium of the Supreme Court as a result of appeals.

Is this many or few? One cannot make a comparison with nothing; who could say how many enterprises transgressed the rules of socialist management how many times, how many fines which could have been justly levied were not or could be levied in the absence of a motion. One thing is certain, in the opinion of experts the data do not faithfully reflect the management or contract discipline of the enterprises.

Formal Discipline

In the first three quarters of last year the motions discussed by the Supreme Court came from the Supreme Attorney, from the chairman of the Central People's Control Committee, from the National Materials and Price Office, from the Ministry of Finance, from the capital council and, in one case, from a megye council. There have been hardly one or two cases initiated by overseeing or branch ministries in recent years although they not only have the right but the obligation to notify the administrative legal organs about irregularities observed in the course of inspections. And they are not the only ones with such an obligation. Every organ authorized to carry out economic checks or quality investigations which observes during its operation an irregularity giving cause for a penalty is obliged to inform the supervisory authority of the enterprise as well as the Supreme Attorney and the chairman of the Central People's Control Committee.

So why are there so few motions? With some simplification the reasons appear obvious. The branch supervisory organs try to function inside the gates, within their own sphere of authority. The topical or special investigations of outside control organs--simply because they are topical investigations--discover irregularities meriting fines only by chance. And those who are injured--for example, enterprises suffering disadvantage due to a delay in scheduled deliveries--would rather keep quiet because in the contrary case they can with cause fear a further deterioration in a contractual relationship which cannot be called good in any case.

In two years fines were levied for misuse of an economic power advantage in only two cases, against the Screw Industry Enterprise and against the Matravidek Metal Works. Both enterprises neglected scheduled delivery of parts prescribed in a contract and did not give price concessions to customers. The court action was initiated by the National Materials and Price Office.

So, on the one hand there are enterprises which act irregularly and violate the order of socialist management and, on the other hand, there are injured organs and organs under an obligation to initiate action. But practice shows that there is hardly anyone who will undertake the responsibility accompanying such a motion.

The economic fine, since it burdens the profit of the enterprises, weighs on the entire collective. For this very reason it is important that the enterprise or cooperative leader who acts incorrectly or in an irregular fashion should be made responsible. The regulation prescribes that the court must be informed of this. According to the data of the Ministry of Justice the management organizations sent in a report on disciplinary action in only 60 percent of the cases in 1979. And frequently a merely formal disciplinary resolution born of 2 merely formal procedure reached the desks of the economic judges.

In one Nograd Megye cooperative, for example, the general meeting did not even impose punishment on the chief bookkeeper and president who directed economic activity without a permit. A cooperative in the area of Szekszard paid a fine of 1,300,000 forints; its general meeting gave only a warning to the president and chief bookkeeper. The director general of a large enterprise in Debrecen and his deputy had 2,000 forints each withdrawn from profit, but this cannot be regarded as an effective punishment because, by means of irregular price setting, their enterprise had made more than half a million in dishonest profit.

A study of how the decree concerning economic fines was being implemented in practice was made recently in the Ministry of Justice. They found that its execution was faulty, that it was not being implemented to the desired degree. This is due in part to the lack of motions and in part to the formal nature of disciplinary action at the enterprises. In contrast to this a correct policy is being implemented in court proceedings in accordance with the legal policy guiding principles.

Stricter Supervision

In the recent past the Supreme Attorney's Office and the Central People's Control Committee signed an agreement with one another in the interest of a consistent and strict application of the Council of Ministers' decree concerning economic fines. The agreement covers not only periodic inspections of enterprises and cooperatives; both organs will also attend to how the regulation is being implemented--do those authorized to initiate cases do so or not when they find irregularities.

Even if the agreement cannot in itself change entirely the present situation it can contribute to seeing that the economic fine is not the rare bird in the legal process and, going beyond the particular enterprise and cooperative interests, that it should be a better expression of social and national economic interests.

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HUNGARY

UNION OFFICIAL DISCUSSES ENTERPRISE WAGE POLICY

Budapest MUNKA in Hungarian No 6, 1981 pp 5-6

[Article by Gyorgy Pinter, deputy chief of the Department of Economic and Living Standard Policy, National Council of Trade Unions: "The Enterprises' Experience With Managing Wages"]

[Text] It will be worthwhile to review the enterprises' wage behavior, although we have not yet reached even the midpoint of the Sixth Five-Year Plan's first year. The experience so far indicates that the management of wages at the enterprises in 1981, in comparison with recent years, better meets the requirements of the economic regulators. This is expressed, among other things, in that the enterprises link increases in wages and earnings more closely to a rise in efficiency, enhancing thereby the approximation of the planned (production and management) objectives. An important role in this favorable change is played presumably by the fact that the enterprises are gaining more and more experience with the application of the system of regulation. Or more accurately: for 1981 the change in the system of regulation over the preceding year was less than in years past, and the changes did not affect the enterprises too "sensitively." Thus the uncertainties of economic activity have narrowed considerably, even though the economic criteria have become more rigorous in many respects.

The planning of the rate of increase in wages and earnings, and payroll budgeting involve deliberate work that must take numerous factors into consideration. It seems that this long-emphasized requirement is increasingly becoming practical reality. The overwhelming majority of the enterprises undertook extensive analyses to determine the principles and rates of this year's wage increases. It is likewise noticeable that enterprise managements--jointly with the trade-union committees and councils--truly sought the workers' opinion and the collectives' participation in the elaboration of wage questions. For the experience in recent years has unambiguously proved that workers react sensitively and knowledgeably to the development of wages and earnings.

In general the enterprises devoted great care to the local ratios of wages and earnings. In contrast with the practice in years past, the enterprises strived to explore rather thoroughly the real causes of possible wage disproportions. In most cases they determined the areas or jobs where

preferential wage increases were warranted. The overwhelming majority of the enterprises included in this category the jobs that involve heavy physical labor under adverse conditions, and also the jobs requiring higher skills and greater responsibility.

Wage differentiation is another matter, and it does not seem to lend itself so readily to generalization. It is indisputable that the start of 1981 produced several positive changes also in this respect. In comparison with last year, for example, there was less debate on which part of wages provided the more incentive, the "basic" or the "variable" part. With which of these parts it was necessary or more expedient to differentiate. And in what ratio should the wage increases be divided between these two parts. In my opinion, the enterprises dealt with these questions more meaningfully this year. It seems that the enterprises increasingly realized that no outside forum was more familiar with the local possibilities and necessary tasks than they, and would not solve these problems for them. Wages commensurate with the work performed are not an objective, rather they are an indispensable means of stimulation. Of course, mere recognition of this truth does not yet mean that it is immediately realized, but the process has started. This is evident from the efforts of the enterprises.

The plans to increase wages are in accord with the 1981 national economic plan's target of a 4.5- to 5-percent increase in earnings. At several enterprises the proposed average wage increase is higher than 5 percent; due to the stagnation or decline of the profit-sharing fund, however, the rise in earnings will be around the national economic average, or below it in some instances.

From the data supplied by several hundred enterprises, and also on the basis of our own experience, it can be established that the 4.5- to 5-percent average rise in earnings shows considerably wider dispersion (considering the planned wage increases) by industries, sectors and particularly by enterprises, than in years past. The possibilities of the system of regulation seem to be asserting themselves better also in this area. Proof of this is the increase in the number of enterprises that are planning a rise of about 2 to 3 percent in wages or earnings, while many enterprises are planning a wage increase of as much as 9 percent.

The wider dispersion of wage increases also supports what we have said in the introduction about the management of wages at the enterprises this year. In this context, however, reference should be made to certain circumstances. Even in years past the situation was not such that would have allowed every enterprise to increase wages uniformly, at a rate corresponding to the national economic average. The rise in wages and earnings differed by enterprises also in previous years. Thus the point in question, we would like to emphasize, is merely that the degree of differentiation will foreseeably be wider this year.

I find it necessary to emphasize also that the differences in wage increases between enterprises may be regarded as warranted only if, and to the extent

that, they stem from an actual rise in efficiency or are commensurate with the improvement in the performance of the enterprise collectives. Otherwise also undesirable wage differences could arise between enterprises. Therefore the trade unions must consider these questions also during the year --primarily at the industry and sectoral levels--and call attention to the circumstances that might cause wage differences not commensurate with the differences in performance.

In comparison with last year, the enterprises' "caution" has subsided (in 1980 this "caution" was mostly warranted or understandable, in view of the producer-price changes and other modifications). This is indicated by the fact that the higher basic wages, which account for a significant proportion of the wage increases, were introduced generally in the first quarter, and within this as of 1 January at many enterprises.

As before, most enterprises want to use the bulk of the wage increase to raise basic wages. (It is indisputably noticeable, however, that the principle of wages commensurate with performance is being applied increasingly also to basic wages.) A majority of the enterprises regard an increase of basic wages effective from the viewpoint of stimulation, particularly if the increase is granted at the beginning of the year.

What are the sources from which wage increases are financed? The answer can vary considerably. At the enterprises that employ payroll budget regulation, a significant proportion of the wage increases still stems from a reduction of personnel. (Not from lay-offs, but from planning no replacements for natural attrition, or from hiring replacement for only a proportion of the natural attrition.) Some enterprises--for example, a significant proportion of the Budapest enterprises--are not even able to replace all or a part of their natural attrition. In spite of all this, it seems that this year a smaller proportion of the wage increases stems from a reduction of personnel than in years past. At many enterprises a significant proportion of the planned wage increases stems from the wage reserves carried over from the preceding year.

Through differentiated wage increases, the enterprises wish to further refine the structure of their personnel, to secure their production, developmental and organizational tasks, to improve their management of inventories, to ensure the better utilization of production capacity--in the final outcome to improve the efficiency of management. Favorable signs are evident also in relation to other questions of the management of wages. The circle of workers who must meet performance criteria is widening; the quantitative requirements are being combined with quality bonuses; and incentives are being provided to economize on materials, particularly on imported materials.

Several enterprises considered reviewing the incentive effect of the employed wage forms, with special attention to meeting the quality specifications, to promoting economization in the use of materials and energy, and to employing wage forms that are in harmony with the nature of production.

At these enterprises it was announced that additional wages would be paid only on the basis of, and commensurately with, additional performance. This warranted the unambiguous and readily understandable definition of the levels of performance linked to wage increases, and the elaboration of measures to ensure continuous work and to tighten discipline in production cooperation.

In every instance the trade-union organs reviewed the annual wage-policy concepts and laid down their recommendations in their standpoints. Often the standpoint of the economic management differed. In such cases the controversial issues were submitted for decision to the council of shop stewards. For example, some items in the enterprise principles on wage increases were changed, the breakdown of the planned possibilities for wage increases by subdivisions was modified, and a better system of incentives for subdivisions was demanded. In conjunction with the wider application of performance wages, the trade-union organs prompted measures to insure conditions for uninterrupted work, and to end the shortage of work that was noticeable at the beginning of the year and even as late as February. The trade-union organs did not dispute the significance of wage indexing, but they deemed it necessary that a suitable budget be available for warranted increases of basic wages.

By their work the trade-union committees and councils of shop stewards indisputably contributed toward the better-substantiated and incentive use of wages tied to performance criteria. The trade-union opinions and standpoints formulated at the meetings of the councils of shop stewards provide good examples. At many such meetings it was demanded that wage indexing be used more in conformity with the plan than up to now, and that there be real performance behind the amounts paid.

The experience to date warrants and necessitates that enterprise managements and the corporate organs of the trade unions work jointly also during the year to implement a far-sighted wage policy, and to adopt measure to remedy as much as possible the negative phenomena encountered in the management of wages.

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IMBALANCE IN SALARIES ANALYZED

Warsaw ZYCIE GOSPODARCZE in Polish 19 Jul 81 pp 1-4

[Article by Mieczyslaw Kabaj]

[Text] The wages and earnings distribution among the population is becoming a subject of lively discussion, giving rise to passions and controversies. During the period of economic crisis, decline in production and efficiency, inflation and deep marketing balance, the definition and observance of principles and rules governing the formation of socially acceptable wages and earnings distribution acquires a special meaning. The formation of wages and earnings distribution always occurs under the influence of two contradictory objectives: achieving minimum standards of remuneration and social justice, and maintaining the motivating function of payments, which brings on an increase of productivity and efficiency of work. Is there a possibility of an optimal combination of these two aims? Which distributions of remunerations under present conditions are nearest to such a desirable state? The problems of distribution of payments and earnings are widespread and can not possibly be dealt with in a short outline. Therefore, I will limit myself to an analysis of various ideas on how to determine a desirable or normative spread between minimum and maximum payments for work in a socialized economy.

It is not necessary to prove that this is an extremely important element of payments' policy, enabling also the adjustment of other and basic payments; spreads. However, in order to present realistic alternatives of possible solutions, it becomes indispensable to analyze the structure of payments in a socialized economy and, in particular, to find a reply to the question of which professional groups receive high and the highest remunerations.

Maximum Payments

There is a widespread opinion that only employees of the government administration and directors of industries receive the highest remunerations. Therefore, it is considered that these salaries can be reduced and in this way considerable funds can be saved to raise the pay of other employees. The reality is more complicated and diversified. Recently very deep changes have taken place, and a specific payments' revolution did occur. Generally, these changes consisted in a more rapid increase of workers' wages, compared with those of white collar workers.

During the period from 1970 to 1980, in the socialized economy the average worker's wage increased by 149 percent, while salary increases of administration and office employees amounted to 118 percent, and of engineering and technical personnel to 11 percent. In 1970, the average salaries of engineering and technical employees were 50 percent higher, and those of administrative office employees 3 percent higher than the average worker's wage.

In 1980, the average engineering and technical employees' salaries were only 23 percent higher, and the administrative and office employees' salaries amounted to 84 percent of the average worker's wage. Compared to the administrative and office employees' salaries, the average worker's wage in industry was 994 zlotys higher, and 1,424 zlotys higher in the building trades. This trend was evident during the whole decade, although it is clear that acceleration occurred in the years from 1978 to 1980.

The participation of workers in high and highest remunerations, appears to be the most characteristic sign of their wage advancement.

In 1978, in the state-controlled economy 112,000 persons received a monthly remuneration over 12,000 zlotys; of these 50,000 were white-collar workers and 62,000 manual workers. In September 1980, 282,000 persons received a monthly remuneration of over 12,000 zlotys; of these 91,000 were white-collar workers, and 191,000 manual workers. It was the first time in the postwar period that manual workers attained such high predominance in the group of high earnings.

The highest earnings, those over 20,000 zlotys per month, were obtained by 8,400 persons, among them, 3,600 manual workers and 4,800 white-collar workers, occupying leading and highest managerial positions in industry, the building trades and other branches of the economy. During the period from September 1980, this ratio changed in favor of manual workers as a result of an increase in wages in the mining and building trades and in heavy industry. The distribution of highest earnings according to branches of the national economy is most characteristic. Close to 80 percent of employees receiving high and highest earnings worked in industry and the building trades; 8,410 persons received over 20,000 zlotys per month, among them 7,676 persons working in three branches: industry, building trades and transportation; for the remaining 12 branches there were 734 persons receiving such earnings. In government administration, in jurisdiction, finances and insurances, all in all, 98 cases of payments exceeding 20,000 zlotys per month have been registered, which amounts to 2.7 percent of the overall number of workers receiving such wages. A complete report on the structure of salaries in the state-controlled economy is presented in TABLE 1. It shows that as early as September 1980 (unfortunately, we do not have newer data) in the group of high wages (over 9,000 zlotys per month), manual workers prevailed. It also is characteristic that 67 percent of those employed were included in the remunerations group of 3,000 to 7,000 zlotys monthly.

Among persons receiving high and highest remunerations, three professional groups dominated: workers (mostly coal miners), metallurgists, shipyard and construction workers, as well as directors of large industrial complexes and associations, and also a small group of people occupying the highest government and party positions.

Remuneration of directors of associations ranged from 14,000 zlotys monthly to 27,000 in mining and metallurgy. Remunerations of directors in industries, from 11,000 zlotys in state administration to 27,000 zlotys in mining and metallurgy. Remunerations at the highest government positions are set in the following way: remunerations of the prime minister, 28,100 zlotys per month; the deputy prime minister, 25,900 zlotys; members of the cabinet, 23,700 zlotys; deputy minister, 25,900 zlotys; members of the cabinet, 23,700 zlotys; deputy ministers, 19,800 zlotys. The first secretary of the Central Committee of the PZPR receives 28,100 zlotys; Central Committee secretaries, 23,700 zlotys; the first secretary of the Executive Committee, 19,800 zlotys, Executive Committee secretaries, up to 15,400 zlotys.* Assuming that on these positions all extraremunatory privileges have been abolished, and taking into consideration the responsibility, character and work intensity (a workday on these positions exceeds considerably the 8-hour norm), it would be difficult to prove that these salaries are excessive, that they greatly or glaringly differ from the wages of leading workers or of the principal managing staff of industry.

From the above statements of fact, conclusions for wage and salary policies may be drawn. Every far-reaching and general reduction of high and highest remunerations, for example, by their taxation, has to affect first of all workers (mostly miners, metallurgists, stockyard workers and building-trade workers), and also the principal managing staff of industry, the building trade, etc. It may entail certain economic and social repercussions and, therefore, requires extremely well-considered solutions and decisions.

Employment in the State Controlled Economy According to
Monthly Remunerations for September 1980.

TABLE 1

<u>Monthly Remunerations</u> <u>(net) in Zlotys</u>	<u>Including workers on</u> <u>positions</u>				<u>Percentage participation</u> <u>of employees according</u> <u>to remunerations on pos-</u> <u>itions:</u>	
	<u>In general</u>	<u>manual</u> <u>workers</u>	<u>white-</u> <u>collar</u>	<u>total</u> <u>percent-</u> <u>ages</u>	<u>manual</u> <u>workers</u>	<u>white-</u> <u>collar</u>
<u>in thousands of persons</u>						
up to 2000	689	482	207	7.4	3.6	6.2
2001-5000	3,279	1,914	1,365	35.2	31.2	41.1
5001-7000	2,954	1,255	998	31.7	32.6	38.0
7001-9000	1,400	960	440	15.6	16.0	13.3
9001-12,000	711	493	218	7.7	8.3	6.6
12,001 and more	282	191	91	3.0	3.2	2.2
TOTAL	9,316	5,996	3,319	100.0	100.0	100.0

Source: Calculated on the basis of the Chief Census Bureau (GUS)

* Detailed information on this subject appeared in the TRYBUNA LUDU, 18 March 1981 and in ZYCIE WARSZAWY of 2 June 1981.

Reduction in Remunerations Spread

There is a widespread belief that the spread of remunerations during the last decade has greatly increased. The problem of spread of remunerations has several dimensions and aspects. An explicit evaluation of processes occurring is difficult, so much the more since statistical information on remunerations is incomplete and always behind schedule.

One of the most prevalent methods of studying distribution of remunerations uses the spread of remunerations according to groups of tens. It answers the question of which part of the wage fund falls on the particular group of tens, from the first to the tenth. Results of this analysis are presented in Table 2.

This analysis shows that in the years 1970-1976, the spread of remunerations increased to some degree, while in the years 1976-1980 it declined and in 1980 was lower than in 1970. A considerable reduction of marginal spreads occurred between September 1980 and January 1981. In January 1981, the 10 percent of those with lowest earnings were receiving 5.3 percent of the wage fund, and the 10 percent with the highest earnings were receiving 17.4 percent of the wage fund. The marginal (maximum) spread in September 1980 took the form of 1:4.28, and in January 1981 - 1:3.28. It shows a very rapid reduction of wage spread within the period of a few months. This was due to wage regulation, to a rapid increase of the lowest wages. In September 1980, close to 14 percent of those employed were receiving wages of up to 3,500 zlotys per month, and in January 1981 this figure dropped to 3.7 percent of wage earners.

Adjustment of the Spread

The above information serves as the starting point for proposing methods of adjusting wage distribution in the future. These propositions have already been discussed in the journal SYCIE GOSPODARCZE (ECONOMIC LIFE) in the preceeding issue. None of the recently published program projects had neglected to discuss the problem of the formation of salaries and income spread. This points to the high social importance of this problem.

THE FIRST ALTERNATIVE assumes the establishment of advisable spreads between minimum and maximum wages. This alternative has been fully formulated in program recommendations for the Extraordinary Ninth PZPR Congress. It proposes the establishment of a normative payments' relation, and here different variants are possible--relations of the lowest, medium and highest remunerations, for example: 0.5: 1: 3.5, (i.e., the lowest remuneration should constitute not less than half of the medium remuneration, and the highest not more than 3.5 times that of the medium). Relations thus selected during the general social discussion would become national norms and guiding principles in the pay policy. It was suggested that these relations would be attained by 1984 in the state-controlled economy (Proposition 59).

TABLE 2 Distribution of Remunerations in Government-Controlled Economy According to Groups of Tens

<u>Groups of Tens</u>	<u>Personnel Wage Fund Befalling to the Share of the Group of Tens - in percentages</u>			
	<u>1970</u>	<u>1976</u>	<u>1980</u>	<u>January 1981</u>
First	4.5	4.4	4.6	5.3
Second	5.9	5.8	6.0	6.6
Third	7.0	6.8	6.9	7.5
Fourth	7.9	7.7	7.8	8.3
Fifth	8.7	8.5	8.7	9.0
Sixth	9.7	9.5	9.6	9.8
Seventh	10.7	10.6	10.7	10.7
Eighth	12.0	12.0	12.0	11.9
Ninth	13.9	14.3	14.6	13.5
Tenth	19.7	20.4	19.7	17.4
<u>Maximum spreads in groups of tens 1)</u>	4.38	4.64	4.28	3.28
<u>Index of maximum compensation in percentages 2)</u>	16.5	17.5	16.6	13.5

1) Maximum decimal spread determines the relation of the tenth value in the group to the value of the first one.

2) The index of the maximum compensation indicates what percentage of the wage fund should be shifted from groups of tens where more than 10 percent of the wage fund falls to lower groups, in order to obtain an ideal, uniform distribution of the wage fund.

Sources: The above was calculated on the basis of: Level and Differentiation of Population Incomes, 1976-1978, GUS (Chief Census Bureau), 1980, No. 36. Results of Analysis carried by GUS on Remunerations for September 1980, Jan Kordes. Evaluation of Employees Distribution in the State-Controlled Economy According to the Level of Remuneration for January 1981. WIADOMOSCI STATYSTYCZNE (Statistical News), 6, 1981, No. 3.

The advantage of this alternative is in the link between lowest, medium and highest remunerations. As the lowest and medium remunerations increase, so will the highest remuneration. This alternative deserves three critical considerations. The first concerns the not very precise determination of the "lowest remunerations." They constitute a value which is different in various sections of the national economy. If one accepts, for example, that the lowest remunerations constitute the minimum payment (explicitly determined) increased by other remuneration elements, then we will not obtain an explicitly determined value, because there may be a variety of these "other remuneration elements."

The second consideration concerns the absolute determination of the maximum remuneration. Although this alternative determines standard relations, it indirectly determines the maximum remuneration, which cannot exceed 3.5 of medium remunerations. Then what will happen if, for example, a miner receives a remuneration exceeding this value, will the surplus over the established maximum remuneration be unpaid?

The third weakness of this alternative lies in disregarding the income situation of working families. Acceptance of these relations consolidates the excessive differentiation of incomes per person in a family, which is subject of social criticism.

THE SECOND ALTERNATIVE proceeds from social aims and circumstances of reducing excessive differentiations of incomes calculated per person in working families. Actually, the differentiation of the income per person in our working families is considerable, it depends not only on the level of remunerations and social services obtained, but mainly on the number of persons employed and of dependents in a family. In 1980, the average income of a single working person amounted to approximately 7,200 zlotys per month, while in families of five persons it amounted to 3,000 zlotys per person, and in six-person families to approximately 2,500 zlotys per person monthly. In marginal cases the differentiation of income per person may be much greater, far exceeding relations of 1:10 or 1:15. It establishes the reason for introducing rules for taxation of family or individual incomes. We find such a suggestion in the draft of the NSZZ-SOLIDARNOSC [Independent Autonomous Professional Union Solidarity] program, which, among others, comes out with a demand for an "introduction of generally obligatory progressive compensatory taxes, payable when the total income per member of a family exceeds the level of an average monthly remuneration."^{*} Let us reflect on what this proposition means in practice. This tax would affect first of all, young people: miners, shipyard workers, building-trade workers, who earn fairly well and have no families. It would also pertain to childless families, people who have reached a relatively higher-than-average level of wages. Therefore, would the possible general introduction of this alternative be avoiding at the same time the negative effects on work efficiency? If, for example, a young miner, or a young welder in a shipyard, received a monthly wage of 12,000 zlotys, would it be feasible to burden him with a considerable compensatory tax only because he has no family? Would it not create a situation in which two workers receive different incomes for the same work only because their family situation is different? Regardless of intentions of the authors of this conception, it introduces into the principles of work remuneration social elements which have nothing in common with work.

* The particular information on this subject was published by TRUBUNA LUDU 18 Mar 81 and ZYCIE WARSZAWY 2 Jun 81.

This alternative would obviously be most fair in relation to the community, however, it could affect work efficiency very negatively, particularly in mining, metallurgy, in shipyard and building trades, where high wages are a result not only of qualifications, but also of adverse conditions and difficulty of work. It does not mean that excessive differentiation of income per person in a family is ignored. These spreads ought to be reduced by a proper increase of family compensations and other social services, and not by introducing social elements into work-remuneration principles.

THE THIRD ALTERNATIVE combines the advantages and rejects the shortcomings of both above solutions. It assumes that the distribution of remunerations and of incomes ought to be optimal, which means that it must guard against the rise of payments' "chimneys" [tops], unfounded by work results and, simultaneously, it should create motivations among leading workers and managers cadres in order to obtain better or outstanding work results. It is assumed that the minimum wage will not be lower than the social minimum per working person. One has to consider that these conditions will be fulfilled when the spread between the minimum and the maximum remuneration (nontaxable) is 1:6. Assuming that the minimum wage will soon reach 3,000 zlotys, the maximum monthly remuneration exempt from compensatory tax should amount to 18,000 zlotys. If the actual remuneration (including the basic pay, bonuses, supplements, etc.) exceeds this value, the surplus should definitely be subject to the prevailing progressive compensatory tax.

The taxing of the highest remunerations does not take into consideration the level of income per person in a working family. There is a possibility of taking into consideration the family situation, consisting in a certain modification of principles accepted at present in rules on compensatory taxes: the total sum of remunerations not subject to taxation would be increased by a value equal to the social minimum per person dependent on the taxpayer. This alternative combines the advantages of both above-presented solutions. At the same time it is simple in realization. It does not weaken the motivating functions of payments, but it eliminates the "chimneys", which have no justification in work results, and which meet with a reasonable social criticism.

Everything indicates that the spreads in vertical payments will diminish. In order not to reduce the incentive aspect of earnings, horizontal spreads have to be increased by creating greater possibilities of promotion in the same positions by increasing incentives for better work at every position, independent of the place on the vertical-position ladder. It constitutes a factor of great importance for the development and growth of work efficiency. In January 1981, close to 52 percent, or 6 million employed people were remunerated within limits from 5,000 to 8,000 zlotys monthly. The outline of promotion chances linked with the kind of work and qualifications under conditions of such a great concentration of employed people in the medium payments bracket constitutes a problem just as important as the determination of marginal distributions. It is, however, a subject deserving a separate and more thorough study.

ROMANIA

PLAN FOR SOCIOECONOMIC DEVELOPMENT IN 1981-1985 REVIEWED

Bucharest REVISTA ECONOMICA in Romanian No 32, 7 Aug 81 pp 4-5

[Article by Dr Dumitru Ciucur and Dr Constantin Popescu: "The Priority of Intensive Factors - A Dominant Characteristic of Socioeconomic Development"]

[Text] In the 37 years that have passed since the victory of the national and social, anti-fascist and anti-imperialist liberation revolution in our country profound socioeconomic changes have occurred. From a primarily agrarian country, Romania has become a country with a strong industrial-agrarian economy in the midst of full development and with a high material and spiritual standard of living.

Correlations Which Express the Growth of Efficiency

A picture of the scope and intensity of the achievements made during the 30 years of a planned economy is presented for us in the data in Table No 1 [see next page]. In 1980, national income was 14 times greater than in 1950. On the other hand, the country's industrial production is today 48 times greater than that of the period prior to World War II. In just the last 10 years, industrial production grew by 2.9 times while net industrial production tripled. In order to more clearly present Romania's industrial power today, let us note that the production achieved in 1980 in industry represents over 80 percent of all the production during the 1956-1965 period. In the other basic branch of the national economy, agriculture, there have also been important successes. Under conditions of reconsidering the significance of this field, especially after 1965, 1980 marks the attainment of a level of agricultural production approximately four times greater than that in 1950, achieving in the last 15 years a more than two-fold increase in agricultural production. This concern for the development and modernization of these two basic branches of the economy was accompanied also, especially after the Ninth Party Congress, by the carrying out of certain new correlations between development efforts and the results obtained, correlations that will constitute the expression of higher efficiency and the conditions for its future acceleration.

Table No 1

Indicators of the Development of the Romanian Economy

Indicators	1950	1965	1970	1980
Total amount of investments in national economy - billions of lei (annual average for periods 1951-1965 and 1966-1980)		24.1		116.2
Fixed Assets - billions of lei	207	517	760	1870
National Income - billions of lei	35	146	214	516
Total industrial production - billions of lei	27.5	178.4	324	936
Total agricultural production - billions lei	32.4	62.5	81.1	128.2
Total volume of foreign trade - billions lei	8.3	43.9	68.5	340.3
Labor productivity in national industry per person (calculated on the basis of total production) - thousands of lei	30.6	105	162.9	320.9
Average net salary for workers - lei per month	337	1,028	1,289	2,238
Nominal net income for the peasantry per working person - lei per month	167	495	571	1,373
Incomes obtained by a person from social consumption funds - per person - lei per year	215	1,204	1,845	3,566
Sales of retail goods via socialist trade - billions of lei	12.1	63.7	99.1	213.1
Total housing units built during the periods 1951-1965 and 1966-1980 (thousands of apartments)		370.3		1,614

We have in mind the more rapid growth of net industrial production in relation to the dynamics of total production, especially noted in the last decade. There was also an improvement in the correlation between the growth of the social product and the growth of national income. The trend of closing the gap between the dynamics of the two macro-economic indicators resulted in, beginning with the 1971-1975 five year plan and the entire recently concluded decade, the more rapid growth of newly created wealth in relation to the dynamics of the social product, a process that shows the ever stronger action of the qualitative factors in the development of our economy. The fact that national income has grown more rapidly than social product expresses the ever more decisive concern for the better use of actual expended labor and for the reduction of material production costs and

the growth of efficiency in all production activities. In the last 10 years, the level of use of the principal raw materials - metals, wood, chemical raw materials, light industry raw materials, fuels and so forth - increased by 2 to 2.5 times, a fact that demonstrates the ever greater capacity of Romanian industry to efficiently resolve the complex problems of a sustained growth in the level of processing and using material resources.

Qualitative elements in the development of the Romanian economy during the years of socialist construction are also illustrated by the evolution of the level and dynamics of social labor productivity. Thus, in industry, in just the last decade labor productivity has nearly doubled, growing at an average annual rate of seven percent, with the contribution of this qualitative factor to the increase in production being ever greater. In agriculture, the growth of labor productivity, especially in the last decade, took place at a more powerful rate than in industry, which constitutes a significant element that contributes to closing the gap between the levels of labor efficiency in these two basic sectors of the national economy.

All these achievements are the direct expression of a scientific, realistic policy of firmly promoting the newest and most efficient advances of science and technology in all fields of activity and of continuing to raise and improve the level of the workers' professional qualifications and competence.

Intensive Development - A General Characteristic of the Current Period

For this five year plan and the current decade, a dominant characteristic of the Romanian economy is the movement to an intensive type of development where growth in national income is achieved with the smallest possible consumption of raw materials and energy, on the basis of higher productivity that is practical under conditions of better using the country's potential.

The carrying out of an intensive type of economic development primarily requires: 1) a rational consumption, at the lowest possible level, of non-renewable mineral resources and fossil fuels; 2) the growth in the complexity of production for the purpose of better using raw materials and energy and substantially decreasing consumption, both in the production process and in the movement, storage and protection of products; 3) rational dimensions for industrial projects, in agreement with increasing economic efficiency and reducing environmental pollution and the amount of land taken away from agriculture; 4) restructuring industrial production so as to permit an increase in the level of use of raw materials and energy on the basis of certain new, modern technologies of higher energy, material and economic-financial efficiency; 5) bringing into the economic processes to a greater degree those resources that are renewable, such as agricultural products, products from the forests and waterways, animal products, power from solar, wind, biomass, water and other forms of energy; 6) developing a complex and efficient agriculture, beginning with the requirement of continuing to improve the well-being of the people, with the agriculture's function as a source for renewable

resources and with its complex role in the economy; 7) rationally, fully and efficiently using the workforce, keeping in mind its evolution in a quantitative, qualitative and structural aspect; and 8) stimulating the initiative and creativity of each worker through every means. The model for development is conceived, thus, from the perspective of quality and efficiency, being based upon the reduction of its dependence upon those resources whose use becomes more and more costly, upon the systematic assimilation of technical-scientific progress, upon ensuring the full and overall use of resources and upon economic-financial self-administration.

The development of the Romanian economy during the current stage is conceived, beginning with the indicators of economic efficiency, upon the basis used to define the parameters for the entire five year plan. The program for the socioeconomic development of the country during the 1981-1985 period ensures the continuation of the dynamic and balanced growth of the national economy, especially on the basis of accentuating the contribution of intensive factors, a direction that is synthetically reflected in the growth of national income at an average annual rate of 7.1 percent. The increase in national income per inhabitant scheduled to be achieved during this five year plan is especially based upon an increase in labor productivity and the higher use of material resources. Thus, the average annual increase in national income during this five year plan will be 42.3 billion lei, which means an increase of over 11 billion lei more than the 1976-1980 period. It will be over 5.7 times greater than that obtained during the 1951-1965 period and 1.7 times greater than the average of the last 15 years. This evolution in the growth of the average annual increase of national income must be appreciated even more during this five year plan since the portion of the national income allocated for development will be something less than 30 percent.

Having as a basic characteristic the transition from extensive development to intensive development, the current five year plan accentuates the correlations of efficiency, creating the conditions necessary to improve qualitative indicators for efficiency and competitiveness in all the sectors of material production, as shown by the data in Table No 2 [see next page].

The Priorities of the Economy - An Expression of Certain Qualitative Transformations

In the context of improving the qualitative elements, the essential priorities for all activities in the economy are given by the stronger development of the extractive industry and agriculture, the organization of the recycling of materials on an industrial scale and the better use of the full material, financial and human potential. In this manner, the premises will be created so that by 1985 Romania will be able to provide from domestic resources 82 percent of the primary energy used, 90 to 98 percent of the necessary amounts of coal and zinc and nearly all aluminum, approximately 80 percent of textile fibers and threads and so forth.

Table No 2

Correlations and Indicators of the Efficiency of Economic Activities

	1976-1980	1981-1985
Growth of national income over the growth of social product	1.04	1.16
Growth of net production (in industry) over the growth of total production	1.06	1.15
Percentage of the amount of construction-assembly in total investments (percent)	35	27
Growth of Labor Productivity	<u>1980</u>	<u>1985</u>
- industry	100	140.4
- agriculture	100	150.0
- construction-assembly	100	130.0
Net production per 1,000 lei of fixed assets, non-amortized facilities in the processing industry (lei)	<u>1980</u> 710	<u>1985</u> 800
Level of use of basic raw materials in the processing industry (in percent)	<u>1980</u> 100	<u>1985</u> 132
Savings made as a result of reducing total costs in industry (billions of lei)	100	200

These forecasts are substantiated on broadening our own base of raw materials by increasing the production of lignite and brown coal to a level that will represent over 40 percent of the total amount mined. In the same direction, there is the application of new technologies that will lead to increasing the final factor of crude oil recovery from 30 percent in 1980 to 40 percent in 1985, which will contribute to increasing our own base of raw materials. Similarly, the volume of reusable energy resources, obtained through recovery and better use, will increase during this five year plan by approximately 80 percent. At the same time, in order to provide the forecast balance in energy use, broad measures are foreseen to accentuate energy conservation in all sectors, to strictly stay within the norms and standards for energy consumption and to accelerate the introduction into production of those products having lower levels of energy consumption.

One of the defining elements of the current five year plan is the intensification of the process of restructuring the economy - industry and other activities - in accordance with the requirements of the national economy. Precisely in this sense, we have in mind the priority development of those sectors that are small consumers of resources and energy and that have activities involving a high degree of complexity, the strong development of small industries and so forth.

The current program of development amplifies the results of concentrating upon the achievement of priority development in those branches and fields of activity directly tied to improving the standard of living and the quality of life. In this context, light industry and the food industry will experience a growth of 43.8 percent and 45 percent, respectively, during this five year plan. The development, diversification and improvement of the quality of the products made in the consumer goods branches are being carried out in full agreement with the requirements and tastes of the people and on the basis of putting the materials used to better use.

The current program for the socioeconomic development of the country is characterized by placing the growth of efficiency in the center of all economic activities. Labor productivity, the principal factor for increasing national income, will grow during this five year plan by over 40 percent in industry, 50 percent in agriculture and 30 percent in construction-assembly. In industry, approximately 80 percent of the increase will come as a result of increasing labor productivity. In the direction of increasing social labor productivity during this five year plan, the increase in the complexity of activities will also play a role, expressed by the fact that the percentage of qualified personnel among the total number of personnel will reach approximately 89 percent.

One synthetic expression of the movement to the first level of intensive, qualitative elements is the provision regarding the growth of production per 1,000 lei of fixed assets and the reduction of total and material production costs, yielding in this manner savings of approximately 200 billion lei in industry alone.

In step with the age in which we are living, in substantiating the provisions of the country's development program consideration was given to the substantial growth of the role of technical progress, scientific research and technological development in using certain new resources of raw materials and secondary resources, the reduction of consumption of fuels and energy and the acceleration of the growth of productivity in all sectors of material production, as well as in increasing the qualitative level of production and the competitiveness of Romanian products on the international market. The volume of foreign trade is forecast to increase by 11 percent per year, a rate of growth much higher than that for social product, national income and the other macro-economic indicators of development. It is an especially significant fact that of the increase in exports for 1985 compared to 1981 approximately 27 percent is to be achieved as a result of improving the structure and increasing the level of use of the products.

The energetic actions of all workers collectives in the direction of reducing expenditures for raw materials, materials, fuels and energy in order to achieve higher profitability constitute a requirement of carrying out the revolutionary leap to a new, higher quality in all the fields of socioeconomic affairs. In this regard, the application of the new economic-financial mechanism means the full and regular achievement of physical, net and goods production at the lowest possible level of material costs and manpower use.

Ensuring priority for the qualitative factors of efficiency in all the sectors of social production is in direct correlation with the level of awareness and professional competence of each worker. Under the system of worker self-management and economic-financial self-administration, the workers must work at the level of the requirements stemming from their positions as producers, owners and consumers of everything that is produced, ensuring the firm forward progress of the country and its prosperity.

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TECHNOLOGICAL ADVANCES RESULT IN GROWTH OF EFFICIENCY

Bucharest REVISTA ECONOMICA in Romanian No 30, 24 Jul 81 pp 1-2

[Article by P. Rotaru]

[Text] A natural result of the material-technical and social conditions of a certain historical stage, the level of efficiency of industrial activity is intimately connected with promoting the most advanced achievements of technical progress into production. Modernization of the structure of production, speeding up the renovation of products and techniques brings to each enterprise and to the entire economy large growths in the level of production achieved in the unit of time for a technological piece of equipment and worker and reduction in material and energy consumption for each product through the increased contribution of technical intelligence. Also, the particular action permits raising the degree of utilization of raw materials, reduction in imports and connection of the local resources to the production circuit as well as rise in quality and competitiveness. Referring to the close tie between the introduction of technical progress and growth in the efficiency of production activity and to the role of scientific-technical creation in propelling Romania to new steps of civilization and progress, Comrade Nicolae Ceausescu stressed: "At the basis of all activity we must place the most progressive achievements of the modern scientific-technical revolution, providing a rise in the technical level and quality of all the products, application of new techniques which permit the reduction in consumption of raw materials, materials and energy, reduction in manufacturing expenses. Let us concentrate our energy, creative force, intelligence and the wisdom of the entire nation on raising labor productivity faster, the decisive factor on which the increase in the national income, the rise in the workers' standard of living and Romania's increasingly firmer step on the path of socialist progress depend."

Experience has shown that the closer and closer link of research with the specific requirements of society's development, its organic integration with production have continually increased the role and contribution of science to promoting technical progress in all areas of activity, to the renovation and modernization of products and technological products and to a rise in efficiency. Thus, in industry, the new and redesigned products introduced into manufacture in the recently concluded five-year plan at the end of 1980 represented nearly 44 percent of the value of production. On the basis of current scientific and technological research, around 5,000 machines, equipment and new and redesigned installations as well as more than 3,300 new materials and consumer goods were assimilated. At the same time, nearly 3,900 modern techniques were introduced into production. National research in the concluded five-year plan has provided around 90 percent of the new materials placed into manufacture as well as more than 90 percent of the new techniques.

of the problems with an extremely broad spectrum of promoting technical progress in industry, in the following we shall concentrate our attention on the contribution of scientific research and technological development to the renovation of products and technologies for the purpose of increasing economic efficiency.

Intensification of Actions for Renovation and Modernization

In the broad process of renovating products and manufacturing techniques, all the industrial branches are involved, particularly the sectors which promote technical progress--machine construction, chemistry, metallurgy. In the machine construction industry, for example, large efforts are being made at the material, human and financial level, aimed at steadfastly raising the quality level of all activity. In order to illustrate these efforts, it is enough for us to show that in the 1976-1980 five-year plan these branches were allocated around 50 percent of the capital for scientific research, technological development and introduction of technical progress belonging to the national industry. The economic effects achieved due to the actions to promote technical progress in this branch also recorded a relatively similar arrangement. It also is worth pointing out that in 1980 around 90 percent of the capital intended for scientific research, technological development and the introduction of technical progress in machine construction was allocated for assimilating new products, while 10 percent was for introducing new techniques, extending the advanced technologies and promoting mechanization and automation.

Highly complex and technical products are noted in the achievements of the researchers and work collectives in the machine construction industry in the 1976-1980 five-year plan, such as the 3,000-HP diesel locomotive; the 16-meter-diameter turning and boring lathe; the turning and boring lathe with a diameter of 5,000-8,000 mm, with two standards; a processing center for reaming and milling with a 132-mm diameter; a parallel lathe with 500-mm diameter with numerical shaping control; 50-ton tip truck; the DAC 120E diesel electric traction tip truck; electronic computers; equipment for minicomputer management of technological processes; new types of drilling installations and so forth.

Among the technologies achieved due to the capital for scientific research, technological development and the introduction of technical progress in machine construction in 1980 we note the introduction of welded subassemblies in machine tool construction, with an effect of raising profits by more than 3.4 million lei; the building of parts from pig iron with graphite nodule utilizing Romanian modifiers and prealloys, with the effect of raising profits by 22 million lei; building cores and forms through the Croning procedure, which insures profits of more than 20 million lei per year.

With regard to the actions for mechanization and automation of the labor processes in the industry achieved in machine construction in 1980, the following should be mentioned: cleaning of forged parts on the cleaning lines by application and buffing by shape and processing of parts by machinery with a center for numerical processing of the parts, which provide for considerable cost reduction and large increase in profits.

Undoubtedly, the achievements obtained in creating new products and efficient technologies are indisputable; however, we also should mention that sometimes relatively slow rates have been found in relationship to the requirements in the line of promoting modern technologies which save on raw materials, materials and energy, as well as in the direction of the structural changes required by the increasingly more

pronounced restrictions in the area of procuring raw materials and the decisive move to new dimensions systems for products, the creation and utilization of replacements, superior utilization of raw material and energy resources and so forth. Precisely by proceeding from these kinds of failures of plan fulfillment in promotion of technical progress, in this five-year plan efforts are being intensified with a view to speeding up the assimilation of new products and modernization of existing ones and for the emphatic development of those sectors which fully and efficiently utilize human intelligence--electronics, fine mechanics, aviation, electrotechnics and so forth.

Sustained efforts are being directed also with regard to raising the coefficient of utilization of metal which is smaller in Romania compared with that achieved in other countries for a number of products (the SC 1600 carousel lathe, the AP 125 processing machine, the G 40 drill press, a press with a 40-ton eccentric and so forth). Here are reflected the additions of metal to the small, medium and large cast pieces which in many cases exceed those in the industrially developed countries by 30-70 percent as well as the effects of outdated technologies in the area of forging, which cause machining allowances which are 10-20 percent greater than those recorded by prestigious firms abroad. On the other hand, it is necessary that efforts be made in the other sectors, too, for creating and providing superior quality materials: in metallurgy--particularly steels, rolled sections and special steel needed for machine construction and other industrial branches; in the chemical industry--dyes, medicines, paints and varnishes; in the construction materials industry--the manufacture or extraction and processing of those materials which involve minimum consumption and high efficiency in assembly-construction activity (utilizing natural stone at a higher and higher level, production of concrete prefabricated materials with a mixture of ash from the thermoelectric power centrals and so forth).

The Modern Concept in the Renovation of Products

Achieving a quality leap in the area of modernization of products and manufacturing techniques involves increasing the contribution of research-design in all branches of Romanian industry. The single national plan for social and economic development for 1981 includes special tasks in the area of promoting technical progress. Thus, new techniques with high efficiency will be introduced and extended in all industrial branches and, particularly, in machine construction, the chemical industry, metallurgy and light industry. For example, in light industry alone, more than 200 modern techniques will be introduced and they will contribute to increasing the proportions of products with a high degree of finishing, of high quality, which correspond to the growing demands of the buyers. At the same time, new products and materials will be assimilated so that the production-good in the proportion of 12 percent due to new and modernized products will be achieved in the processing branches of the national industry and they will be introduced for the first time in mass production this year.

Achieving high economic efficiency and quality, competitive products is determined to a great extent by a radical change in the concept of renovation of products and techniques. This means that even in the conceptual phase one must proceed from the product's functions and usefulness, which permits those solutions to be used on whose basis the products have high output, reduced weight and reliability. That is why special stress must be placed on strengthening the role of design so that it becomes a decisive means in the modernization of production and in increasing economic efficiency. Recently study and analysis actions were initiated in the big industrial enterprises to amplify scientific research and technological development and their own

activity for the conceiving and redesign of certain oversized products with big consumptions of raw materials, materials, energy and fuel. For example, specialists in the concept departments and machine builders in Resita have succeeded in replacing old air compressors with a new family of compressors which have superior performance, as we see in the figures we show here:

	Old type	New type	Difference(%)
Special weight in kg/cubic meters/minute	176	91	48.3
Special consumption of electric energy-- kWh/cubic meter	6.35	5.1	19.7

Just by moving to build new families of compressors of 100, 50 and 25 cubic meters per minute, savings of around 1,100-1,200 tons of metal will be obtained in the 1981-1985 five-year plan as well as nearly 65,000-70,000 kWh of electric energy and 11-12 million cubic meters of cooling water.

The indisputable economic advantages have also been recorded in the area of diesel motors for rail transport. Among other things, a motor was adopted for naval propulsion, through redesign, provided to supply a portion of our river and Danube Canal-Black Sea ships, for which elements were used from the type R 251 family of motors, providing a reduction of around 3 percent in fuel consumption compared with the aggregates built until now and an increase of around 50 percent in operating time between two major repairs. Such concerns for raising the degree of utilization of raw materials through building products with high technical-operational characteristics, which are competitive and at reduced costs must be extended so that new progress is obtained during this five-year plan in improving the quality of the products and in raising efficiency.

In the context of the increase of quality of efficiency also is the contribution of scientific research and technological development in the area of providing energy resources and the economical management of them, by creating a machine system which is adequate for exploitation of coal, improvement in the combustion methods for inferior coal in the thermoelectric power centrals, extending the utilization of heat recovery receptacles and air preheaters and so forth. Thus, for example, in 1981 more than 20 percent more energy resources than in 1980 will be recovered. At the same time, around 60 percent of that will have to be utilized in installations other than the ones which result, which even in 1980 required adequate measures of design and execution of the necessary jobs.

Priority Directions for Investigation and Necessary Actions

Consistently promoting the achievements of modern scientific-technical progress in all areas is one of the efficient ways to have national economic growth. Utilization of the conditions created along the years--modern material-technical base, a large number of researchers and designers--requires, as is emphasized in the party documents, intensification and orientation of the efforts of all concerned factors--the enterprises, centrals, scientific and technological engineering institutes, ministries, central organs--toward a number of priority directions of action:

The concentration of the forces of scientific research and technological engineering with a view to achieving special programs worked out by branches and subbranches of industry in the shortest possible time and avoiding the approach to petty problems and dispersal of research forces on too large a number of subjects. This is the

place to point out that, with a view to achieving this goal, the notes for technical-economic substantiation for introducing products and new techniques into manufacture or improved products which are approved by the collective leadership organs of the ministries and the other central organs who are the plan holders must become to an increasingly greater extent real means of leadership of technical development, which provide high economic efficiency carried out by reducing material and production expenses, increasing profits, reducing imports, increasing exports, improving the rate of return and net currency contribution both for the producer as well as the beneficiary;

Optimization of the relationship between applicational and basic research with a view to solving the stringent problems of the economy in the priority areas of material production and providing long-range continuity in the technical thinking which answers the requirements for renovation and development imposed by the modern scientific-technical revolution;

Improvement in the researchers' information on the achievements obtained nationally and internationally with a view to avoiding tie-ups of research capacities and material and financial capital in the research goals being resolved now. The major tasks belonging to the scientific research and technological engineering institutes in assimilating products and technologies in Romania require quality scientific-technical information, to which the institutes and researchers and other specialists from the technical departments of the enterprises, centrals and ministries may make their contribution, also. No material, human and financial effort dedicated to knowledge of the achievements obtained in one area or another is greater than that of the actual research and technical creation. For that reason, what are needed in the course of initiating and implementing the programs for technical development are the exchange of publications with similar institutes in other countries, broad dissemination of technical innovations and information obtained from Romania and abroad in bulletins or other publications, including the multilateral and immediate utilization of the information gathered during participation in fairs and international exhibitions, exchanges of experiences and documents in other countries;

Shortening the time it takes from the idea to implementation of it in products and technologies, in order to avoid negative implications of moral usage. Today more than ever, the producer must be aware that powerful competition in gaining and maintaining the market segment in the given area requires the rapid promotion of technical innovations in production. It also is more and more clear that the chances for success belong to the enterprises which succeed in satisfying the beneficiaries' requirements on time and under irreproachable conditions for the high quality and efficient products and technologies;

Closer correlation of the efforts of the research and technological engineering institutes with the production units' tasks both in providing documentation for the products as well as the duties assumed in promoting advanced, highly efficient and economic technologies in production with effects in speeding up the building of new products and technologies and in increasing the efficiency of the technical creation for the beneficiaries. In this way, losses of the useful economic effects will be avoided, effects caused by failure to correlate which may appear between the point at which the research is carried out and that which provides the technical, material and organizational conditions needed to move the technical solutions and new products into mass production, particularly by failing to take the appropriate measures to

provide the design and building of the tools, devices and controls needed to move the technical solutions and new products into mass production. Also, prolonging the length of time it takes to work out the scientific research and technological development projects may be prevented beyond normal limits as well as the failure to sell the new products built within the appropriate terms.

8071

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ROMANIA

INTERNATIONAL COOPERATION IN PETROLEUM TECHNOLOGY URGED

Bucharest REVISTA ECONOMICA in Romanian No 32 7 Aug 81 pp 22-23

[Article by Dr C. Rusin: "The Participation of Romanian Science and Technology in the Better Use of Resources"]

[Text] Opportunities for Extending International Cooperation in the Petroleum Industry

International technical-scientific cooperation constitutes one of the most important channels for transferring technology and technical knowledge. At the same time, by extending our country's international technical-scientific cooperation activities there is an intensification of the exchange of material wealth, an exchange where our country is in a position to benefit. There is also an increase in Romania's level of participation in the international division of labor, thus using to a greater degree the advantages stemming from this division by ensuring certain stable and long-term relations that characterize technical-scientific cooperation.

In the field of the petroleum industry, the participation of Romanian science and technology in the realm of international collaboration and cooperation also represents a means of solving, through cooperation with foreign partners, those scientific and technological problems of interest for our petroleum industry. At the same time, it is a means of better using the capabilities of Romanian science and technology by participating in the discovery and use of certain deposits of hydrocarbons in partner countries, with this constituting a long-term source for supplying hydrocarbons (crude oil and gases) to our national economy.

Actually, in this field Romanian science and technology has a significant potential and long experience. The crude oil and gases extractive industry in our country has over 120 years of experience, and its activities have been carried out in a very large variety of deposits.

The 12th Congress of the Romanian Communist Party gave Romanian petroleum workers tasks of great responsibility in developing the base of hydrocarbons so necessary to our socialist economy, which is in full development. Thus, tasks are established to explore and put into use new deposits of crude oil and gases located at great depths and on the Romanian continental shelf of the Black Sea, as well as to

increase the efficiency of exploration and prospecting projects by using modern techniques for complex geological exploration. Scientific research and technological development activities in the petroleum extraction industry have the major task of drawing up modern intensive exploration technologies for hydrocarbon reserves under conditions of maximum economic efficiency, resulting in providing efficient technologies for drilling probes and exploiting hydrocarbon deposits at great depths and for increasing the recovery factor for crude oil deposits. At the same time, the objectives established by the 12th Congress regarding the development of international scientific and technological collaboration and cooperation are creating an especially favorable framework and involve important tasks for the development and growth of efficiency of cooperation activities on the international level in the field of the crude oil and gases extractive industry.

In this field, the carrying out of the Program-Directive for Scientific Research, Technological Development and the Introduction of Technical Progress is also creating the premises for the more intense promotion of Romania's international technical-scientific cooperation, a basic factor for modernizing the economy at a rapid rate, for better using our own technical and scientific potential, for favoring the transfer of advanced technologies and for participating in universal technical-scientific progress.

The high degree of competence of Romanian specialists and the quality and performance of Romanian-produced equipment, as evaluated on an international level, equipment which in recent years has also included offshore drilling platforms, constitute factors of the first order for extending and increasing the efficiency of our country's international technical-scientific collaboration and cooperation in the field of the crude oil and gases extractive industry.

At the same time, it should be noted that our country's international technical-scientific collaboration and cooperation activities in the field of the crude oil and gases extractive industry in recent decades have generally experienced an ascendent evolution. Scientific research and technological development for petroleum and gases in our country have achieved bilateral collaboration and cooperation with all the socialist countries having a petroleum industry, such as: Bulgaria, Czechoslovakia, East Germany, Yugoslavia, Poland, the People's Republic of China, Hungary, the Soviet Union and so forth, as well as in a multilateral framework within the Council of Mutual Economic Assistance (CEMA). Similarly, collaboration activities have been carried out with partners in the developed capitalist countries, such as the United States, France, West Germany and Great Britain; and with other countries in Europe such as Greece and Turkey; with developing nations such as Argentina, Algeria and Indonesia, as well as with other countries in South America, Africa, Southeast Asia and the Middle East. We note that the 10th World Petroleum Congress took place in 1979 in Bucharest.

Despite all the positive results recorded, Romanian scientific-technical collaboration and cooperation activities in the field of the petroleum and gases industry did not, nonetheless, rise to the level of its possibilities with regards to expansion and efficiency, which makes necessary a more intensive participation by our country in international technical-scientific collaboration and cooperative activities in the petroleum industry.

Romania - A More Active Participation in the "United Nations Development Program" in the Petroleum Industry

As a country militating for the establishment of a new international economic and political order, Romania is recognized and appreciated in the world both through its broad collaboration activities with the developing nations and through its activities and initiatives within the United Nations. Through its representatives to the Group of 77 meetings or to United Nations meetings and in the working organs of the United Nations, our country has supported the need to help the poorly developed nations and the developing nations so they can become masters of their own national resources of raw materials and energy and so they can be helped to put their natural resources to better use, thus contributing to raising the economic level of these countries.

Both through the consistency with which our country militates for the solution of the raw materials and energy problems, for the creation of a new international economic and political order and for the elimination of unequal relations and the achievement of general progress, and through the potential of Romanian science and technology in the petroleum industry, which has a long tradition and experience, Romania constitutes an especially interesting cooperation partner for participating in the achievement of certain programs in the "United Nations Development Program" in the field of the petroleum and gases industry.

Our country's reduced level of participation to date in cooperation within the framework of the programs of the "United Nations Development Program" (UNDP) is due to both unjustified restraint in getting involved in certain cooperative actions and insufficient knowledge of the framework and manner of organization of UNDP activities. Among the objectives of the programs recorded in the UNDP priority list and which are of interest for cooperation in the field of the crude oil and gases extractive industry, the following are worth mentioning:

- the promotion of measures to conserve energy, the rational development and use of resources, especially non-renewable resources;
- the creation of a domestic potential in developing nations that will select and negotiate the transfer of technology, as well as achieve the development of certain technologies meeting local conditions and objectives.

The UNDP programs in the field of putting certain hydrocarbon resources to better use constitute for our country not only a means of putting into practice the principles of a policy of being an active militant for the creation of a new economic and political order in the world, but also an especially useful means of putting our crude oil and gases extractive industry's technical-scientific potential to better use abroad.

Romanian science and technology's participation in the achievement of programs financed by the UNDP can refer both to putting to use hydrocarbon deposits in different developing nations and to participating within the frameworks of certain scientific programs of a broader interest, such as: studies to determine the deep structures of the earth's crust in different areas of the world, studies and follow-up observations of potential geophysical fields and the establishment of recent vertical movements in the earth's crust, and complex studies to establish the distribution of temperatures, gradients and geothermal fluxes, and the contouring of perspective reserves for geothermal resources.

Cooperation in Marine Petroleum Activities on the Continental Shelves of Other Countries

Seismic prospecting carried out on the Romanian continental shelf of the Black Sea in order to discover those geological structures favorable to the accumulation of hydrocarbons, an activity begun over 10 years ago, as well as the projects carried out during this period to produce in our country offshore drilling platforms (of the self-jacking type) and the offshore drilling projects to date have laid the bases for a new activity for our petroleum industry. This industry is, thus, acquiring broad perspectives with regards to activities to discover and put into use hydrocarbon deposits on the Romanian continental shelf of the Black Sea and to participate within the framework of cooperation with foreign partners in the exploration and putting into use certain deposits of crude oil and gases on the continental shelves of other countries.

The improvement and continued development of our petroleum industry's potential in this field, keeping in mind the broad perspectives for development in numerous areas of the world in offshore petroleum activities, open a broad field for cooperation for our country's petroleum industry. With regards to these perspectives, the following aspects should be taken into consideration:

- of the total area of the offshore zones with prospects for petroleum and gases, only one-seventh was or is to be explored. Thus, an immense area (approximately 60,000 km²) is to constitute the object of future petroleum exploration activities;
- hydrocarbon reserves located in marine deposits that have not yet been worked are estimated at approximately 22 billion tons;
- the confusion that rules in offshore oil research activities constitutes an especially favorable time in which our country, as a producer of offshore oil drilling rigs and as one which has specialists in the field of marine geophysical

research, represents a very attractive partner for cooperative actions in projects to discover and put into use marine deposits of crude oil and gases in different parts of the world.

More Efficient Forms of Technical-Scientific Collaboration and Cooperation

In the majority of cases, in resolving certain problems in our petroleum industry regarding the improvement or achievement of new technologies in the field of exploring crude oil and gas deposits, drilling and exploiting crude oil and gas drilling probes, treating drill holes to intensify extraction or working on deposits to increase the recovery factor of the crude oil, the form of technical-scientific collaboration practiced consisted of exchanges of experience, documentation visits by specialists or exchanges of technical-scientific informational or documentation materials.

Under the conditions where our country's scientific and technological collaboration and cooperation with other countries in different economic and technical-scientific fields has developed and has continually improved in step with the progress achieved in the area of cooperation on an international level, limiting these activities in the area of the petroleum and gases extractive industry to merely exchanges of experiences and documentation visits means stripping these activities of the greatest portion of the advantages that can be obtained through effective cooperation by way of a division of effort among partners.

On this basis, an important means of increasing the contribution of technical-scientific cooperation and collaboration on the international level, especially in the cases of partners with a high technical-scientific potential, is practicing certain forms that have superior efficiency, such as:

- the achievement, through joint efforts, of programs in scientific research and technological development and the achievement in production of certain objectives of common interest, using the results of the partner countries as well as those of third parties;
- the joint creation of institutes, laboratories or pilot stations where joint activities in scientific research and technological development can be carried out in accordance with the appropriate conditions;
- the creation of joint groups (with specialists from both parties) for research and development that would carry out their activities to resolve certain problems of common interest on the basis of working programs that are under agreed upon material and financial conditions;
- the reciprocal transfer of technological and industrial knowledge and the common use of licenses and invention patents, as well as the joint development of new technologies of mutual interest;

- the achievement of joint activities to develop or better use certain invention patents belonging to one of the partners;
- cooperative actions for the development of a material base for research and development activities (research equipment, pilot stations, experimental centers and so forth) for the purpose of creating conditions to carry out certain future joint scientific research and technological development activities in the field of the petroleum extraction industry;
- the joint accomplishment of studies and projects and mutually interesting technologies and installations, including those for third parties;
- the granting and receipt of scientific and technical assistance on a contract basis, consisting of consultations during design work, the achievement of studies and projects, the training of specialized personnel for different working techniques and technologies and so forth;
- the carrying out of scientific and technical testing and verifications under agreed upon conditions, as well as carrying out certain technical-scientific services;
- the organization of industrial expositions, accompanied by scientific and technical conferences, as well as scientific symposia and reports with participation by specialists from both parties.

For specific problems, Romanian technical-scientific cooperation and collaboration in the field of the crude oil and gases extractive industry with partners in socialist countries or developed capitalist countries having the experience and the potential at a similar or higher level in comparison to that of our petroleum and gas industry, it is possible to achieve projects in scientific research, technological development and industrial progress regarding:

- the development of geological research for hydrocarbons through teledetection and other high-level techniques to discover hydrocarbon deposits located at great depths or in subtle pockets;
- the application of modern procedures (satellite imagery, nuclear methods, electronic methods and so forth) in the technology of geological, geophysical and geochemical research to discover hydrocarbon deposits;
- the improvement of work technologies in drilling shafts and exploiting offshore hydrocarbon deposits and the reduction of energy consumption in the drilling process and the optimum use of the drilling program;
- the elaboration of new methods essentially different from known ones to increase the crude oil recovery factor to 50 to 60 percent.

In the case of collaborating and cooperating with partners in developing nations, where Romanian science and technology can make a contribution to the development of science and technology or to the petroleum extraction industry in these nations, collaboration involves, for the most part, acting as a supplier, for the Romanian side, of technical-scientific assistance for the purpose of finding and putting into use certain hydrocarbon deposits in these nations.

The initiation and carrying out of fruitful cooperative actions within the framework of some of the projects mentioned above, as well as the identification of other new projects for cooperation, requires the Romanian side to have a sustained, permanently aggressive concern for attracting certain valuable partners for cooperation.

8724

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INCREASED DEVELOPMENT OF DOMESTIC ENERGY RESOURCES PLANNED

Bucharest SCINTEIA in Romanian 14 Jul 81 pp 1, 3

[Article by Ilie Stefan]

[Text] "The activities of the 1981-1985 five-year plan are focused on the development of the energy, raw materials, and other materials base. We must do everything in our power to create from domestic resources the largest possible quantities of raw and other materials, by deriving value from domestic reserves, even if some of them contain lesser amounts of useful substances."

Nicolae Ceausescu

A fundamental priority for Romania's socioeconomic development during the 1981-1985 five-year plan is a sustained production growth in branches which must assure raw material and energy resources. Stressing the great significance of this economic imperative in his speech to the Second Congress of Workers' Councils, the secretary general of the party, Nicolae Ceausescu, clearly stated: "The plan places particular emphasis on the stronger development of the raw material base and of domestic energy resources, as well as on the greater development of agriculture, these sectors being the decisive factor in our country's socioeconomic development and in raising the material and cultural standard of living of the people."

Closely correlated with this essential orientation toward the powerful development of the primary sector of the national economy, a larger portion of the material base for fulfilling the 1981-1985 five-year plan will be assured from domestic resources. Thus, based on the development of the extractive industry, agriculture, forestry, and the exploitation of wood, as well as the industrial-scale organization of recycling of useful materials, by the end of the current five-year plan Romania will supply from domestic resources 82 percent of the consumed primary energy, 90-98 percent of its coal, metallurgical coke, milled products, and pipe requirements, 80-90 percent of its lead and zinc, practically all of its aluminum, and about 80 percent of its textiles, fibers, and filaments.

These are ambitious but fully achievable goals: they are founded on a rigorous, profoundly scientific analysis of our country's possibilities, as well as on the current and future requirements of the national economy. It is to Nicolae Ceausescu's unquestionable credit to have recognized that the more intensive mobilization of the national resources of raw materials and energy--especially under

the conditions created by the economic, and particularly by the oil, crisis which has become more acute throughout the world--is a fundamental requirement for the country's socioeconomic development at the present stage, and for assuring Romania's energy independence until 1990.

The demands for assuring as much as possible of the necessary raw materials and energy from domestic production are strongly reflected in the provisions of the new five-year plan. The fulfillment of these provisions implies stronger efforts to fully exploit our country's available resource potential, including those resources located at great depths or those that are of poorer quality. By 1985, in the extractive industry, by expanding existing exploitations and opening new ones, the production of lignite and brown coal will increase more than 2.7 times, so that by the end of the five-year plan over 40 percent of the total extraction volume will be obtained by new units. Concurrently, in order to reduce the currency effort of the national economy, in 1985 the entire production of soft coal will be washed for coke, thus satisfying one-half of metallurgy's cokable coal requirements.

In order to increase coal production at the forecasted rate, the development of extraction in the Oltenia Basin open pits will be accompanied by the placement in exploitation of new pits and mines in the Vilcea, Mehedinti, Banat, and Sf. Gheorghe basins; at the same time, research will be intensified to find coal deposits in the vicinity of Bucharest and in Olt County.

A reading of the current five-year plan provisions will also disclose the particular attention devoted to broader geological projects for discovering and exploiting new oil and gas reserves, and to the application of new technologies which will lead to an increase in final recovery factors for oil deposits, from 32 percent in 1980, to 40 percent in 1985.

The same considerations--meeting as much as possible of the raw materials demand from domestic production--are also at the basis of the provisions regarding the valorification of new ore deposits: the current five-year plan forecasts the placement in operation of capabilities amounting to 20 million tons of ore, which will contribute to a substantial increase in the production of raw materials that are presently imported.

Concurrent with a broader raw material base, the electric power industry will also undergo a significant development. According to provisions, electric power production during the 1981-1985 five-year plan will increase by 22.3 percent. According to our party's energy policy and the Program-Directive adopted by the 12th Congress of the RCP, large structural modifications will occur during the current five-year plan, in terms of increased electric power production from coal and water resources. Thus, while the electric power produced in hydroelectric plants will increase by 10 percent, and that produced with coal and shale by 118 percent, the electricity produced from hydrocarbons will decrease by about 27 percent.

The intensive nature of the economy's growth during the five-year plan of quality and efficiency, is also illustrated by the special attention devoted to expanding our resources through recovery and reutilization of raw and other materials obtained from production and consumption processes. To this end, the plan provides a greater

than 60 percent increase in the degree of recovery and valorification of reusable resources. This approach must assure in all sectors at least 50 percent of the needed raw and other materials, parts, and subassemblies, this being a major objective established by our party's leadership.

In their totality, these provisions constitute a program of unprecedented magnitude and comprehensiveness for the sustained development of the country's base of raw materials and energy. As the secretary general of the party has shown, it is important that these resources of raw materials and energy be identified and effectively exploited; their valorification, even if they are more difficult to reach or if their contents of useful substances are poorer, is economically more advantageous than if they had to be imported at constantly increasing prices from the world market.

Romania's material resources are naturally limited, and it therefore must continue to import a number of basic raw materials such as oil, coke, iron ore, cotton, and so on. Yet, the phenomena generated throughout the world by the shortage of raw material and energy resources are intensifying: every year, the prices of oil and other material resources are running out of control, forcing the importing nations to make additional currency efforts. During 1980 for instance, the oil imported by our country as absolutely necessary to the national economy, has cost nearly 1.5 billion dollars more than in 1979, solely as a result of its price increase.

Under these conditions--when the importation of raw materials strictly necessary to the national economy is particularly costly--we must act with all our forces and means to further develop the domestic base of raw materials and energy, so that we will have recourse to imported resources only within strictly necessary limits. And the ways and means for achieving this goal are clearly formulated by Nicolae Ceausescu in his speech to the Congress of Workers' Councils, and are well stipulated in the 1981-1985 plan. In essence, they are aimed at the full involvement of specialists and all workers in geology and the branches of the extractive industry; in the formulation of valuable methods and solutions for increasing the base of raw materials and energy; in further efforts to discover and exploit new oil and coal reserves, as well as new useful substances; in reducing the duration of prospecting and geologic research; and in perfecting technologies for extraction and preparation of mineral substances.

The country needs more coal, oil, ferrous and non-ferrous ores, and other material and energy resources! In practice, their production can be increased without limit. Responding to the inspiring encouragements addressed by Nicolae Ceausescu at the Congress of Workers' Councils, and at the large peoples' assembly in the city of Timisoara, geologists, miners, oil workers, and other workers with tasks in this domain, have the great and patriotic duty to work unstintingly, with enthusiasm and revolutionary drive, and most responsibly, for the fulfillment and overachievement of the objectives assigned to them in this year's plan and the entire five-year plan, with the firm conviction that an increase in the country's resources of raw materials and energy is a vital matter in the determined advancement of our nation on the road of building a multilaterally developed socialist society.

PROGRAM AIMED AT INCREASING OIL RECOVERY FACTOR EXAMINED

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[Text] Covering the needs for crude oil to as great extent as possible from our own resources is an important goal in our energy policy. Besides the increases in reserves which may be obtained from geological research work, an important resource is in increasing the final recovery factor. On the basis of indications from the party and state leadership, even in 1974 a program was worked out to increase the final recovery factor at the crude oil deposits (it is forecast to achieve a 42-percent level of recovery by 1990), which comprises a series of measures for the research and application of modern technologies capable of contributing to the increase in quantities recovered from the deposit.

Correct knowledge of the geological and recoverable reserves is one of the most important problems of the petroleum industry, which brings the choice of the exploitation method, rate and levels of production possible to be achieved at one deposit or another, the volume of investments and drilling projects and, in the end, the production costs. In this context the fact should be emphasized that even many years ago we moved from the utilization of exploitation methods using only the deposit's own energy to the successful application of so-called conventional methods at a large number of deposits (water or gas injection), which seek to push or wash the crude oil from the layers through which it flows.

New Technologies--High Performance

On the average, the natural exploitation leads to achieving recovery factors situated between 20-25 percent, factors which may be increased 5-10 percent by applying conventional methods, that is, energy contribution from outside. Special examples of the successful application of conventional processes in Romania are the achievements obtained at the deposits in the oil fields of Ticleni, Cartojani, Boldesti, Moinești-Lucăcești, Oprisenesti, Cobia south and others, where final recovery factors of between 40-55 percent are insured by water injection. Also kept in mind was the transition to the implementation of new methods through the program increasing the final recovery factor, besides extending the conventional methods and the thickening and completion of patterns for all deposits where their application is possible and indicated; these methods are as follows:

Thermal procedures (the injection of steam and subterranean combustion), whose purpose is to increase recovery by introducing heat into the deposit with effects on reducing viscosity and, thus, improving the flow conditions; these methods are being applied with great success at the deposits in Moreni (steam) and Suplacul de Barcau (combustion). It should be mentioned that the industrial process of moist combustion at Suplacul de Barcau in its extent is the biggest in the world, with the production obtained being around 1,200 tons per day compared with the most developed process in the United States (West Newport), which produces 550 tons per day.

Chemical procedures (the injection of viscous water--with polymers, micelle solutions, alkaline and surface-active substances) which, through the addition of additives to the injection water, seek to create conditions to improve the flow and reduce the quantity of crude oil retained in the pores of the layers;

Mixable procedures (the injection of carbon dioxide or other high-pressure gases) for fluidization of the crude oil and pushing it more easily toward the extraction pits;

Petromining procedures (extraction of crude oil by mining jobs --shafts, galleries or underground pits);

More recent research made both in Romania and abroad has shown that increasing the density of the production and reaction pits, that is, completing and thickening the patterns permit an increase in the recovery factor and, as a result, is a method which should continue to be taken into consideration in the future.

The possibility of applying conventional methods and those which increase recovery to which we have referred is determined by the diversity of the geological-physical characteristics of the deposits which vary within very broad limits from one deposit to another. The main parameters which determine the area of action for the new methods consist of the volume of oil remaining in the deposit following natural exploitation or by injection of water and the deposit's behavior in the past; the geological-physical characteristics of the formation (porosity, permeability, depth, thickness, degree of fissuration or uniformity, nature of the rock, temperature, pressure); the properties of the crude oil (viscosity, specific weight, acidity) and of the deposit's water (salinity, carbonates and so forth). The area of applicability of the new methods depending on these parameters is presented as an outline in the table, from which we may see that no one procedure can be applied to all the deposits and that there still is a big range of deposits for which not one of these procedures is applicable (for example, for the powerfully cracked deposits, nonuniform ones, those with small permeability and so forth).

The experience obtained until now through research and experiments made also has shown that the performances of the same method may vary from one deposit to another, many times unforeseeably. Only through checking of the hypotheses for the research and design and through carrying out pilot experiments of long-range semi-industrial production (2-4 years) for each deposit separately can more complex conclusions be drawn on the possibilities and efficiency of applying one procedure or another.

Increase in the final recovery factor requires application of various methods for a considerably larger number of projects than forecast initially and the execution of a greater number of jobs (digs, pits, installations, pipes and so forth) to the limit and even beyond the existing capacity for execution, supply which has been forecast in the annual programs of measures.

Methods for Increase in and Areas of Applicability of Recovery

Procedure	Mechanism	Factor in crease (%)	Area of Applicability
Thermal Procedures: Injection of steam	Reduces crude oil viscosity	10-25	Heavy crude oil deposits located at up to 1,000 meters depth and with relatively high permeability
Subterranean combustion	Reduces crude oil viscosity	10-35	Heavy and viscous crude oil deposits situated at up to 1,500 meters depth with thin layers (up to 25 meters) and high permeability
Mixable Procedures: Injection of CO ₂	Mixability of CO ₂ in crude oil reduces its viscosity and increases volume and pressure	10-20	Deposits with up to 2,000 meters depth and low thickness and permeability greater than 50 millidarcy
Chemical Procedures: Injection of polymers	Increase in viscosity of injection water	15-25	Deposits with above-average degree of consolidation and nonuniformity, with average and high permeability and small thickness (up to 20 meters); relatively viscous crude oils (5-80 centipoise)
Injection of surface-active solutions	Reduces interfacial tension	10-20	Relatively permeable deposits containing crude oil with medium density, water with reduced salinity and little clay
Injection of micellar solutions	Reduces interfacial tension	10-30	Gritty, sandy deposits with thickness less than 10-15 meters and permeability greater than 50 millidarcy, containing crude oil with medium density and slightly salty deposit water
Injection of alkaline solutions	Increases viscosity of fluid injected; reduces interfacial tension, moistening with water	5-10	Deposits containing acid crude oils with average density and permeability greater than 50 millidarcy and thickness less than 15 meters

Thus, as a result of the actions carried out in the 1975-1980 period compared with the forecasts included in the program of measures, projects were executed and high achievements were recorded as follows: for carrying out experiments and processes, around 2,400 new pits were dug for injection, reaction and for thickening and completion of patterns compared with the 1,200 forecast in the program; there were 142 projects on which work was done to initiate processes to increase the final recovery factor, which was 60 more than had been established initially; large increases were registered in the volumes of fluids (water, gases and air for subterranean combustion, steam) injected into the deposit, with average annual rates of between 11.8 and 43.4 percent; the activity of research carried out in the laboratory and through job site experiments was carried out by doing 344 studies and deposit projects compared with the 106 forecast in the program.

At the beginning of 1981 the recovery methods had begun to be applied industrially and experimentally in more than 180 projects of the approximately 350 deposits existing in Romania; initial recoverable reserves of these deposits represent more than 75 percent of the country's total. In the 1975-1980 period, year after year, the tasks for production were overfulfilled as a result of applying the particular methods, totalling more than 2.5 million tons (or 20.5 percent). The percentage of production obtained by the methods to increase recovery in total production rose from 10.5 percent in 1974 to more than 27 percent in 1980. A special contribution in achieving production in 1980 was made by the combustion processes at Suplacul de Barcau (more than 400,000 tons), of the water injection at Dragoesti (around 230,000 tons), Videle (225,000 tons), Oprisenesti (120,000 tons), Tazlau-Moinesti-Lucacesti (more than 115,000 tons) and by the steam injection at Moreni (more than 107,000 tons).

The Recovery Program

Since conventional methods actually are being applied today in all the deposits where they are indicated, the utilization of some new technologies are required to increase the average countrywide recovery factor for crude oil. The move to apply them, however, means compulsory successive achievement of the following stages: theoretical and pilot research in the laboratory; experimentation on the work site for a portion of the deposit in order to check the theoretical hypotheses and obtain the information needed to design the installations; the move to exploit the deposit on an industrial scale by applying various methods and so forth. Taking into account the current stage of research and experiments carried out, we understand that for the 1981-1985 period a vast program of action must be carried out, one intended to lead to a maximum increase in the final recovery factor. The main directions of the program are:

Experimentation and faster move to the industrial phase of the thermal methods of subterranean combustion and cyclical and continuous injection of steam at all the deposits where their application is indicated (it should be mentioned that experimentation work has begun at most of these deposits);

Complete implementation of the experiments and promotion of the favorable results at all the deposits where the application of the methods of injection with viscous water is suitable;

Experimentation and the move to the industrial application of the injection of carbon dioxide at the deposits where the application of the methods is indicated and where sources of the agent exist nearby;

Introduction of chemical methods at a large number of deposits, that is, injection of micellar solutions and of alkaline or surface-active substances. It should be

mentioned that these methods here as well as abroad are in the phase of laboratory research and in very few cases (in the United States) in the phase of work site experimentation;

Experimentation for the purpose of ascertaining the possibilities for applying certain special nonconventional methods of injection with water or gases (cyclical injection, by alternate combination of water-gas, changing the power lines), which permit increase in the recovery at some deposits with unfavorable characteristics or with very difficult technical conditions for exploitation. At these kinds of deposits the experimentation will have to last at least 2-3 years in order to draw the appropriate conclusions;

Intensification and improvement of research activity with a view to working out new methods and improving existing ones, particularly by the following: reanalyzing the situation of exploitation of the deposits where methods are being applied to increase conventional recovery or thermal recovery with a view to increasing their efficiency, particularly with regard to the potential for recovery, reduction in energy consumption and combatting of the negative effects caused by nonuniformity of the layers; achieving micellary solutions and other surface-active substances adequate for our deposits in the laboratory and pilot stations and experimentation with them on the job site in order to be able to organize their industrial manufacture; adaptation of thermal and chemical methods to increase recovery in the deposits with difficult properties and physical conditions; working out and experimenting in at least three projects with mining operation technologies of the deposits and in a pilot plant for extraction technologies for crude oil from the mining table; research and working out of new methods to increase recovery, based on other principles and on physical-chemical knowledge differing from what is known.

Achievement of this program of action as well as of crude oil production through application of the methods planned of more than 5 million tons by 1985 requires in this five-year plan a special effort of drilling, investment and supply with much more than achieved in the preceding five-year plan. In order to give an example of the increase in effort, we must show that the number of pits to be dug and placed into operation in this five-year plan in order to carry out the experiments and for industrial application of the methods will exceed 6,000, compared with the 2,400 dug in the previous period.

Requirements and Priorities of Action

The current knowledge obtained on the basis of our experiments as well as at the world level, with regard to applying measures to increase recovery, shows that extending it is connected with satisfying more requirements. Among other things, it is a question of utilizing certain much more dense pits rather than exploitation by natural or conventional methods as well as, in the case of thermal methods, a more complicated pit construction; considerably greater energy consumption; more complicated operating conditions, requiring a greater number of interventions and repairs at the pit by brigades; bigger and complex installations for the preparation, treatment and injection of fluids in the layers; a relatively long operating time, that is, low rates of extracting the reserves.

All these lead to the fact that the economic indicators (costs, productivity, rate of recovery of investments and so forth) are below those obtained through natural exploitation or by the so-called conventional methods. However, if we keep in mind

the situation of crude oil prices on the international market as well as its rising trend in the future, it is indisputable that the return price for a ton of crude oil which can be obtained by applying the methods mentioned is below that obtained from import in the great majority of cases.

In connection with the experimentation and industrial application of the new methods, two aspects should be mentioned which must be kept in mind in the future programs, that is, the large volume of investments and the high specific investment brought by the characteristics shown before, as well as the possibility that, in some cases, the results of the experimentation could be negative or that upon industrial application results are obtained which are below the indicators obtained during the experimentation, with the risks being greater as the knowledge of the real situation of the deposit is poorer. For that reason, we feel it necessary once again to stress the decisive importance of obtaining as complete information as possible on the deposit before moving to carry out experiments or to industrial application, which requires appropriate supply. In this context it should be emphasized that although the program places before the oil workers tasks which involve the highest level of knowledge and technicity, existing information, particularly on the properties of the old deposits, as well as the possibilities for obtaining them through investigation are hindered by the insufficient modern apparatus for gathering tests and investigation. At the same time, it should be mentioned that the research done in Romania at some deposits has shown differences (which may reach 20-25 percent) between the values of the reserves calculated previously and those obtained by measurements made with modern apparatus.

Implementation of the program to increase the recovery factor requires the fastest possible solution of certain problems, among which are the following:

Assimilation of various types of high-pressure pumps with resistance to corrosion, compressors, steam-pressure generators, equipment for making micellar chemical solutions, packers resistant to high temperature and so forth, all within very short periods of time in the machine construction units;

Assumption and introduction into manufacture in the chemical industry of various chemical products needed to prepare the micellar solutions and surface-active solutions or to increase the productivity of the pits, as well as polymers to get the viscous water;

Having the units of the metallurgical industry obtain various special steels and pipes for casing joints, injection and piping.

But insuring an increase in the crude oil recovery from the deposits also means raising the activity of the entire crude oil extraction industry to a new level. This primarily is connected with reviewing and improving the concept of organization in order to strengthen the technological specialization of the basic sectors. Among the measures required in this area we should mention the organization of special units to increase recovery in the extraction fields, organization of independent drilling units and improvement in the structure of the drilling fields and production. The high level of technicity of the new methods and their complex nature, on the other hand, require special concern with training the operator personnel in the fields. This requires making up personnel of all categories with persons specialized in mechanics, thermoelectric, automation and chemistry as well as achieving firm discipline, raising their knowledge by retraining all personnel in the problems of the new technologies.

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